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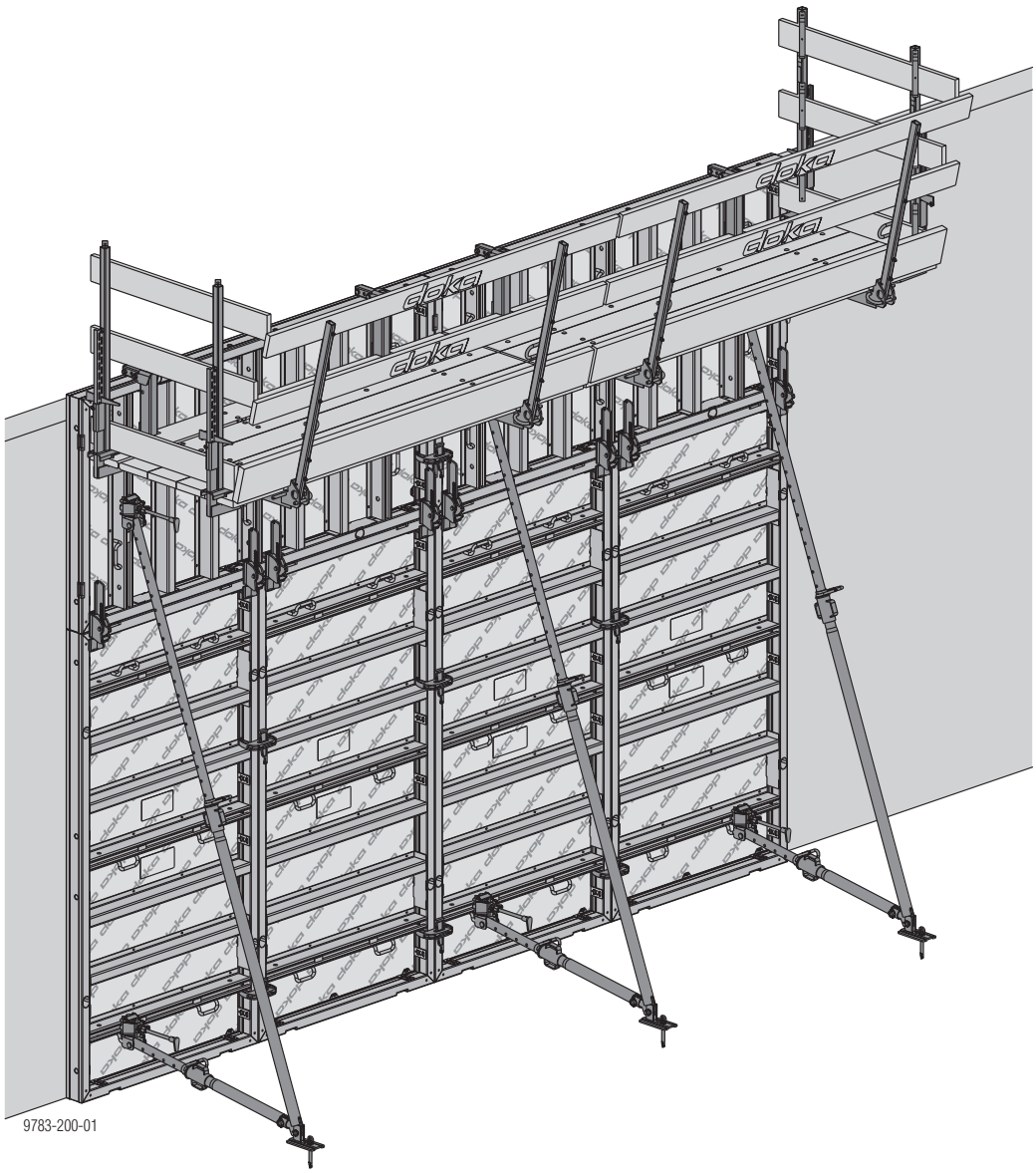
Method statement

# Framed formwork Framax S Xlife

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doka

The Formwork Experts

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# Basic safety warnings

## User target groups

- This User Information booklet (Method Statement) is aimed at everyone who will be working with the Doka product or system it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilization of the system.
- All persons working with the product described herein must be familiar with the contents of this manual and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to insure that the information materials provided by Doka (e.g. User Information booklets, Method Statements, Operating Instruction manuals, plans etc.) are available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilization plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.
  In all cases, users are obliged to insure compliance with national OH&S (occupational health and safety) rules throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

## Hazard assessment

- The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site.
  This document serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilize the system. It does not substitute for these, however.

## Remarks on this document

- This User Information booklet can also be used as a generic method statement or incorporated with a site-specific method statement.
- **Many of the illustrations in this booklet show the situation during formwork assembly and are therefore not always complete from the safety point of view.**
  Any safety accessories not shown in these illustrations must still be used by the customer, in accordance with the applicable rules and regulations.
- **Further safety instructions, especially warnings, will be found in the individual sections of this document!**

## Planning

- Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- **If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.**

## Rules applying during all phases of the assignment:

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose under the direction and supervision of suitably skilled persons with the authority to issue instructions.
  These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial/commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability of all components and units must be ensured during all phases of the construction work!
- The functional/technical instructions, safety warnings and loading data must all be strictly observed and complied with. Failure to do so can cause accidents and severe (even life-threatening) damage to health, as well as very great material damage.
- Fire-sources are not permitted anywhere near the formwork. Heating appliances are only allowed if properly and expertly used, and set up a safe distance away from the formwork.
- The work must take account of the weather conditions (e.g. risk of slippage). In extreme weather, steps must be taken in good time to safeguard the equipment, and the areas immediately around the equipment, and to protect employees.
- All connections must be checked regularly to ensure that they still fit properly and are functioning correctly.
  It is very important to check all screw-type connections and wedge-clamped joins whenever the construction operations require (particularly after exceptional events such as storms), and to tighten them if necessary.

## Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in suitable condition. Steps must be taken to rule out the use of any components that are damaged, deformed, or weakened due to wear, corrosion or rot.
- Combining our formwork systems with those of other manufacturers could be dangerous, risking damage to both health and property. If you intend to combine different systems, please contact Doka for advice first.
- The assembly work must be carried out by suitably qualified employees of the client's.
- It is not permitted to modify Doka products; any such modifications constitute a safety risk.

## Erecting the formwork

- Doka products and systems must be set up in such a way that all loads acting upon them are safely transferred!

## Pouring

- Do not exceed the permitted fresh-concrete pressures. Excessively high pouring rates lead to formwork overload, cause greater deflection and risk causing breakage.

## Stripping the formwork

- Do not strip the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped!
- When stripping the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax S bias-cut corners.
- When stripping the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

## Transporting, stacking and storing

- Observe all regulations applying to the handling of formwork and scaffolding. In addition, the Doka lifting equipment must be used - this is a mandatory requirement.
- Remove any loose parts or fix them in place so that they cannot be dislodged or fall free!
- All components must be stored safely, following all the Doka instructions given in the relevant sections of this User Information booklet!

## Regulations; occupational health & safety

- Always follow all federal, state and local safety regulations and other safety rules applying to the use of our products.

Instruction as required by EN 13374:

- If a person or object falls against, or into, the side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

## Maintenance

- Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorized facilities.

## Symbols

The following symbols are used in this booklet:

**Important note**
Failure to observe this may lead to malfunction or damage.

**CAUTION / WARNING / DANGER**
Failure to observe this may lead to material damage, and to injury to health which may range up to the severe or even life-threatening.

**Instruction**
This symbol indicates that actions need to be taken by the user.

**Sight-check**
Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.

**Tip**
Points out useful practical tips.

**Reference**
Refers to other documents and materials.

## Miscellaneous

We reserve the right to make alterations in the interests of technical progress.

# Product description

**Framax Xlife version S –**
**a European framed formwork system tailored to the special requirements of the North American market.**

**Doka framed formwork Framax Xlife** is a complete system which also comprises high-performance safety and workplace accessories. The system lets you tackle forming tasks (especially large-area ones) very **swiftly and efficiently**.

The **ingenious panel size-grid** makes for **optimum adaptability** to all construction-site situations.

The connecting devices and accessories are also designed to fit in with this grid.

The **innovative plastic coating of the Xlife sheet** enables it to be re-used intensively, with superb concrete results every time.

Framax Xlife is perfectly tailored for use on:

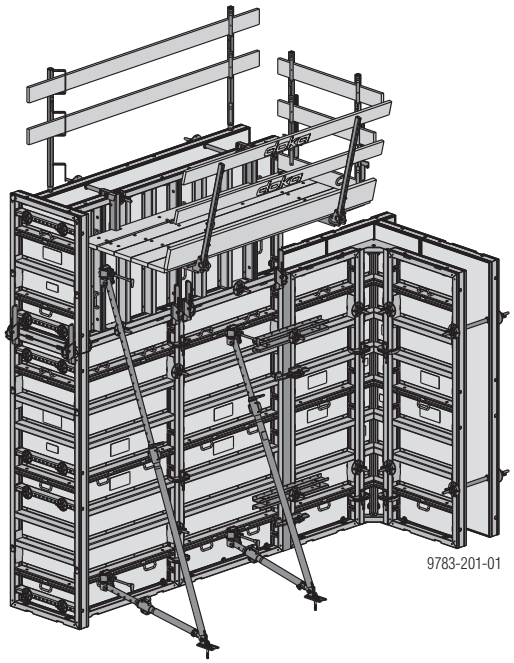
- Large-area walls
- Columns
- Circular formwork
- Footings

A range of practical accessories makes work on the site a lot easier and does away with the need for costly job site improvisations.

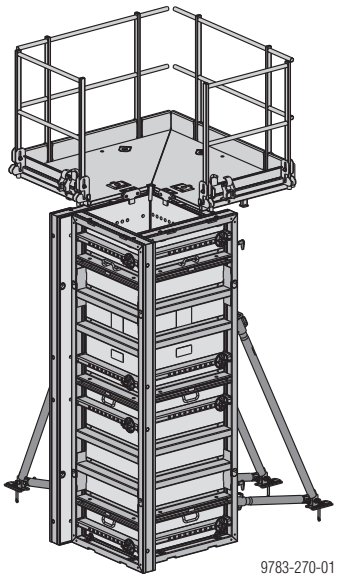
With **Framax Xlife**, you can gang-form large areas, moving the formwork by **crane**.

## Areas of use

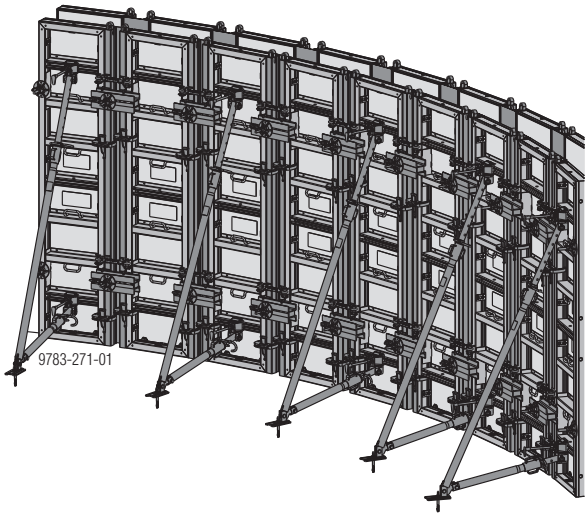
### Wall formwork



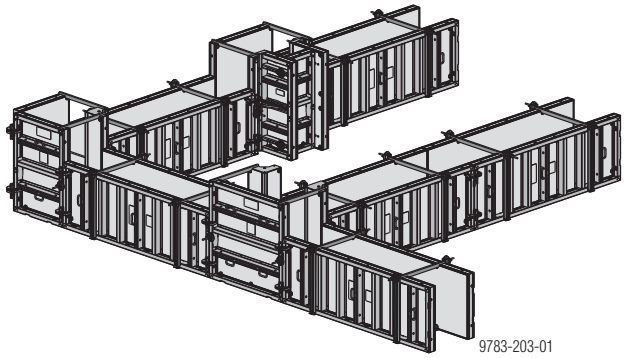

### Column formwork




### Circular formwork




### Footing and grade beam formwork



# Forming walls with Framax Xlife

**Doka framed formwork Framax Xlife is the ideal framed formwork for large-area crane-assisted gang-forming.**

The **exceptionally high safe working load** and **long lifespan** of Doka Framax Xlife make it highly **economical** for all wall-forming tasks.

**Permitted fresh-concrete pressure:**
1,650 psf (80 kN/m²)

Where the concrete density is 150 pcf (25 kN/m³), this corresponds to a hydrostatic pour-height of 10'-6" (3.20 m).

Framax Xlife is exceptionally versatile and flexible, so you can quickly form any layout with it.

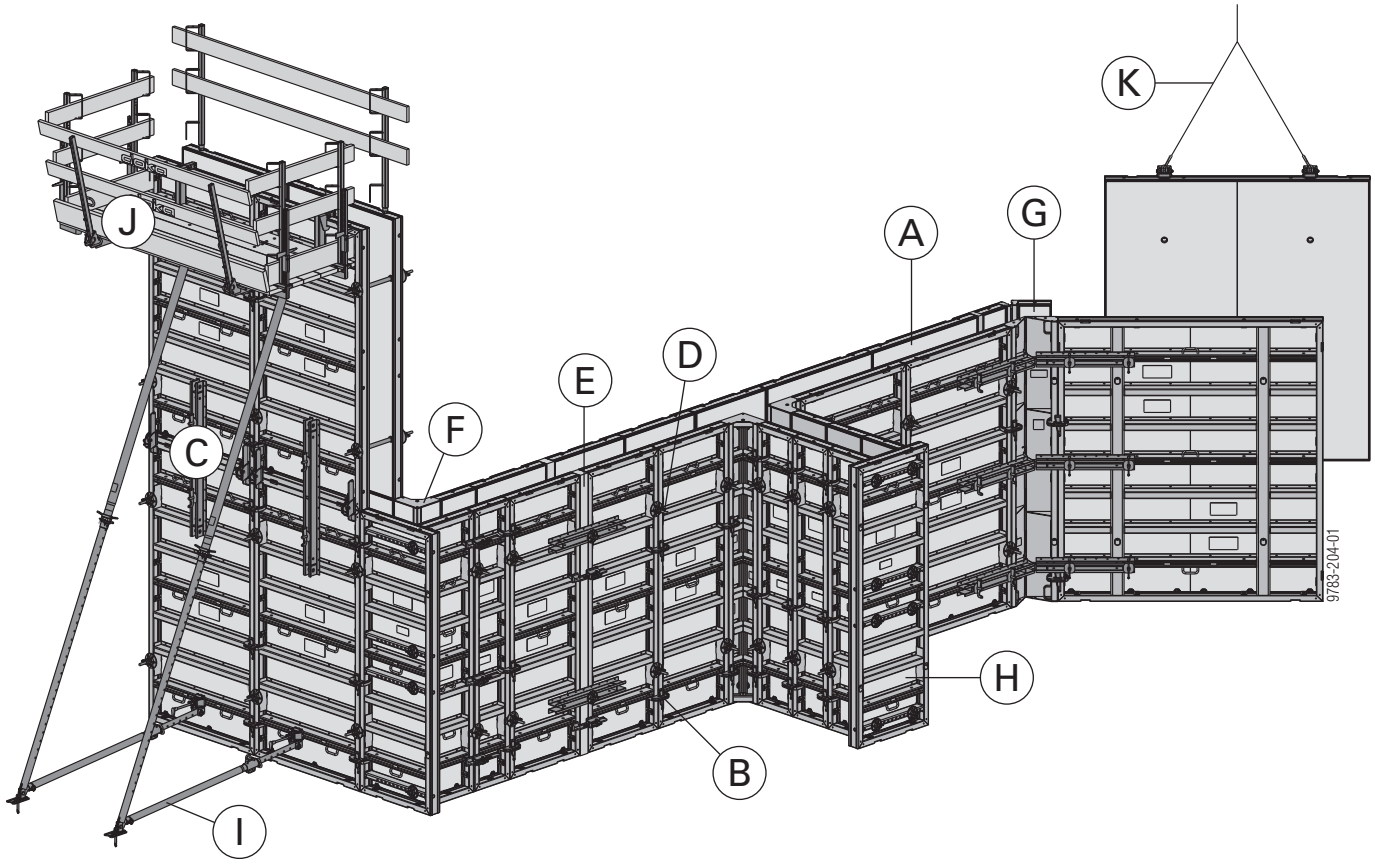
The panels can be fixed together at any point around the frame, quickly and safely, using Framax quick-acting clamps RU or multi-function clamps.

Because the Framax Xlife panels are so robust, you only need **2 form-ties per 2.70 m of panel height**.

Any filler-gaps left between the Framax Xlife panels are very easy to close. The system gives you a choice here between several different options, so that you can always get the best possible **length adjustment** in each case.

Framax Xlife also takes **corners**, **bulkheads** and **wall junctions** efficiently in its stride. Here too, it gives you perfect, cost-saving solutions.

**Matching safety and workplace accessories** make working with Framax Xlife even quicker and easier.





| | |
|---|---|
| **A** | Framax S Xlife panel (Page 12) |
| **B** | Joining gangs (Page 20) |
| **C** | Vertical stacking of panels (Page 24) |
| **D** | Tie-rod system (Page 33) |
| **E** | Length adjustment (Page 40) |
| **F** | 90 degree corners (Page 42) |
| **G** | Acute and obtuse-angled corners (Page 52) |
| **H** | Bulkhead formwork (Page 60) |
| **I** | Plumbing accessories (Page 68) |
| **J** | Pouring platforms (Page 74) |
| **K** | Resetting by crane (Page 79) |

# Method statement

The sequence shown here is based on a straight wall. As a rule, formwork set-up should start in a corner, working outward.

## Transporting / handling the panels

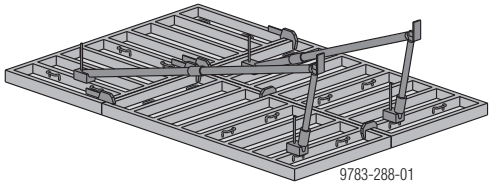
➤ For offloading panels from a truck, or lifting them on-site a stack at a time, use the Framax transport gear (see "Transporting, stacking and storing").

➤ To lift off one panel at a time, use Framax transport bolts 5kN and the Doka 4-part chain 3.20m (see "Transporting, stacking and storing").

## Pre-assembly

➤ Pre-assemble gang-forms face-down on an assembly bench (see "Inter-panel connections").

➤ With the gang-form still flat, mount panel struts to it (see "Plumbing accessories").



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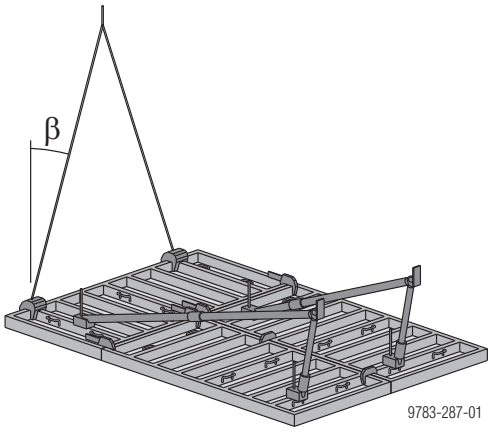
## Erecting the formwork

➤ Attach the lifting chain to the Framax lifting hook (see "Resetting by crane" and the Operating Instructions for the "Framax lifting hook").

**Max. load:**

- Spread-angle β up to 7.5°:
  3300 lbs (1500 kg) per Framax lifting hook
  Feasible formwork area with 2 lifting hooks:
  approx. 480 sq.ft. (45 m²)
- Spread-angle β up to 30°:
  2200 lbs (1000 kg) per Framax lifting hook
  Feasible formwork area with 2 lifting hooks:
  approx. 320 sq.ft. (30 m²)

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➤ Pick up the gang-form by crane.

➤ Spray the plywood face with release agent (see "Cleaning and care").

**Important note:**

➤ Guiding the gang should be done with tag-lines that are long enough to keep the person who is doing the guiding out of the way of the gang.

➤ Fly the gang-form to its new location.

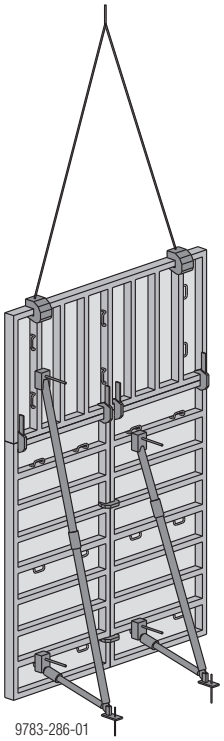
**CAUTION**

Never use a sledge-hammer to plumb and align the panels!

This would damage the profiles of the panels.

➤ Use only proper plumbing tools (e.g. a special pry-bar) that cannot cause any damage.

➤ Fix the panel struts firmly to the ground (see "Plumbing accessories").



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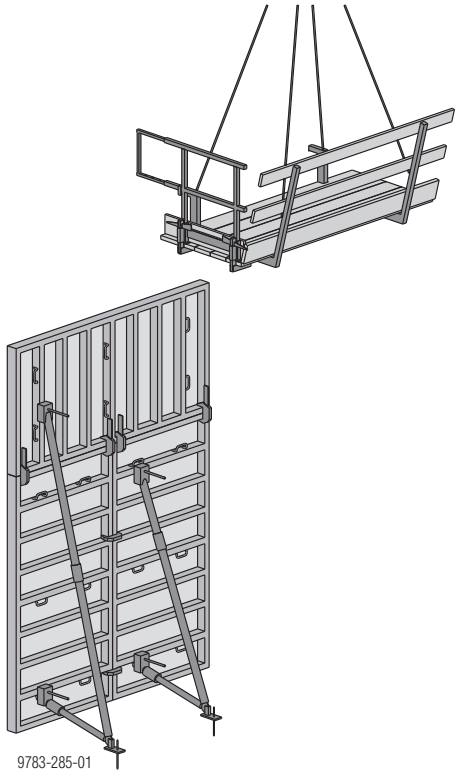
The gang-form is now stable and can be plumbed and aligned exactly, with no need for the crane.

➤ Detach the gang-form from the crane.

**WARNING**

➤ Do not allow people to ride on the formwork or platform.

➤ Hook the pouring platform into place (see "Pouring platforms").




**WARNING**

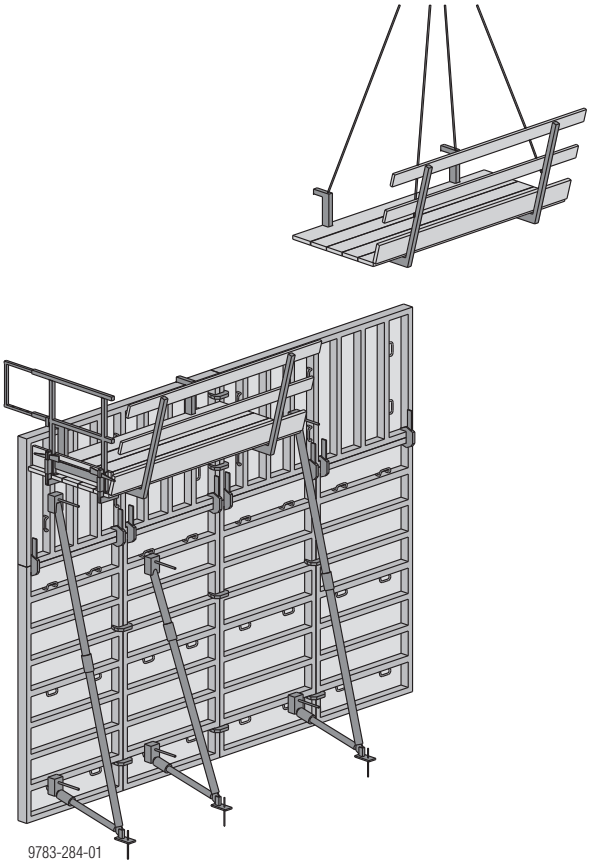
There is not yet an opposing guard-rail on the formwork!

Danger to life from fatal falls!

➤ Either use personal protective equipment to protect against falls
or
mount an opposing guard-rail to the gang-form while this is still being pre-assembled in a flat position.

➤ Detach the pouring platform from the crane.

➤ Continue lining up adjacent gang-forms in this way, and clamp them together (see "Inter-panel connections").




➤ Fit end-of-platform sideguards (see "Pouring platforms").

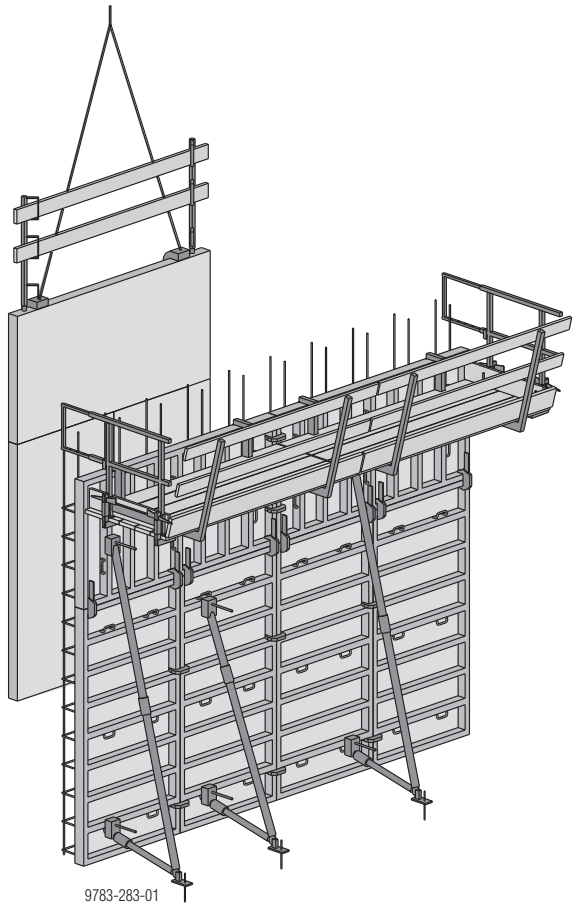
## Erecting the opposing formwork

**Once the reinforcement has been placed, the formwork can be closed.**

➤ Mount the opposing guard-rail to the (face-down) gang-form of the opposing formwork (see "Pouring platforms").

➤ Spray the plywood face with release agent (see "Cleaning and care").

➤ Fly the opposing formwork by crane to its next location.




➤ Insert the form-ties (see "Form-tie system").

Before disconnecting from the crane:

➤ If there are no panel struts on the opposing formwork, do not disconnect the gang from the crane until a large enough number of form-ties have been installed to keep it safely in an upright position.

➤ Detach the gang-form from the crane (wherever possible, operate the lifting hook from the opposite pouring platform).

➤ Continue lining up adjacent gang-forms in this way, and clamp them together (see "Inter-panel connections").

# Pouring

**Permitted pressure of fresh concrete:**
1,650 psf (80 kN/m²)
(see "Framax Xlife panel in detail" and "Form-tie system")

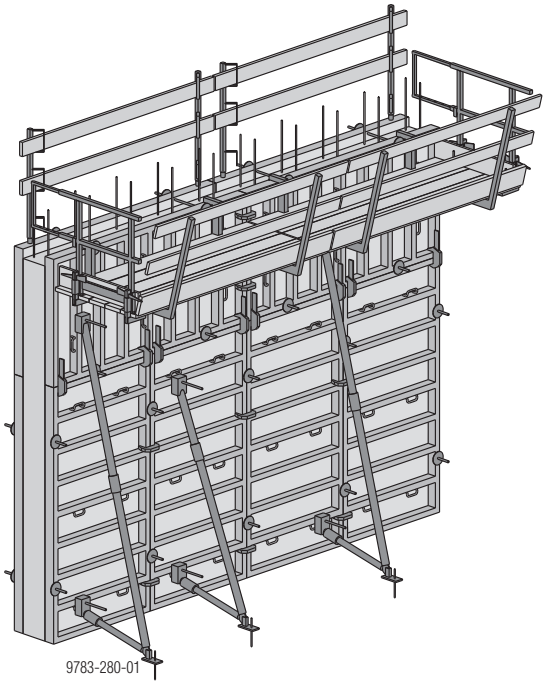
Observe the following **guidelines**:

- The section headed 'Pressure of fresh concrete on vertical formwork – DIN 18218' in the Calculation Guide 'Doka formwork engineering'
- ACI 301 - "Specifications for Structural Concrete"
- ACI 309 - "Guide for Consolidation of Concrete"
- ACI 347 - "Guide to Formwork for Concrete"
- SP4 - "Formwork for Concrete"
- CAN/CSA S269.3 - "Concrete Formwork"

➤ Do not exceed the maximum permissible rate of placing.

➤ Pour the concrete.

➤ Make only moderate use of vibrators, carefully coordinating the times and locations of vibrator use.



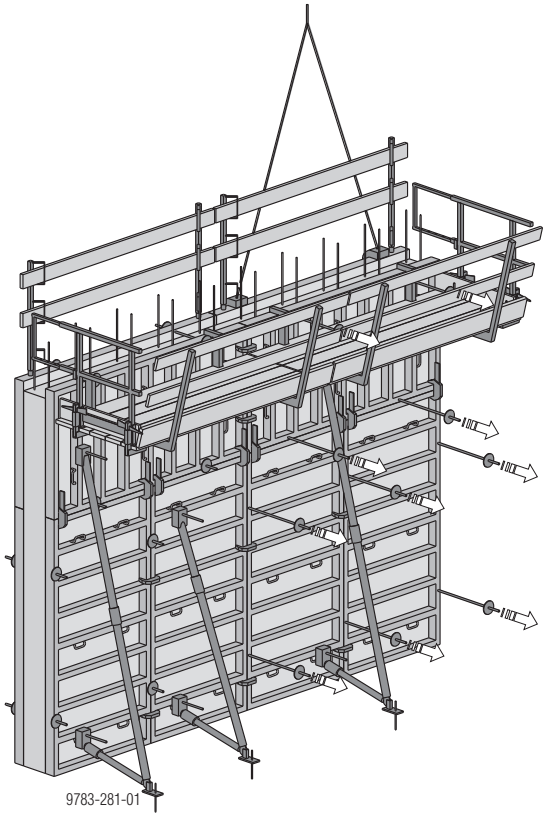
## Stripping

➤ Observe the stipulated stripping times.

➤ Remove any loose items from the formwork and platforms, or secure them firmly.

➤ Attach the gang-form of the unbraced formwork side to the crane (wherever possible, operate the lifting hook from the opposite pouring platform).

➤ Take out the form-ties and undo the connectors to the adjacent panels.




In order to speed up operations when repositioning by crane, most of the form-ties can be taken out in advance.

**Warning!**
However, there must be at least as many form-ties left in place as are needed to keep the gang safely in an upright position.

**WARNING**
The formwork tends to adhere to the concrete. When stripping the formwork, do not try to break concrete cohesion using the crane!

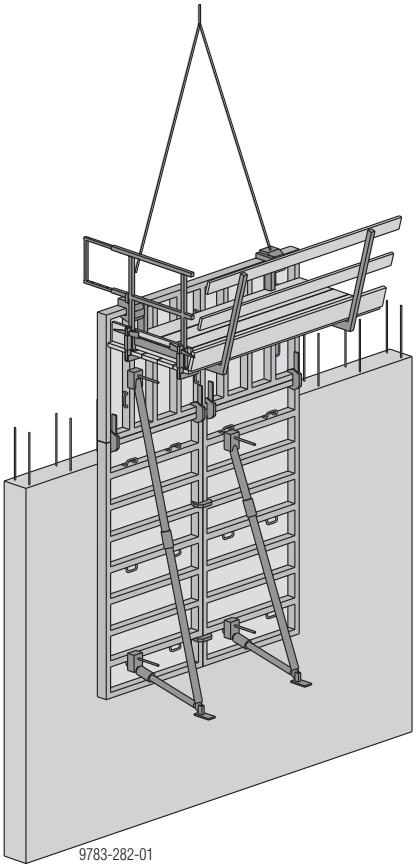
Risk of crane overload.

➤ Use suitable tools such as timber wedges or a special pry-bar to detach the formwork from the concrete.

➤ Pick up the gang-form and fly it to its next location.
If the gang-form is "parked" in the upright prior to its next use, it must have sufficient stability (see "Plumbing accessories").
Gang-forms with only one panel strut must not be "parked" upright, but placed face-down.

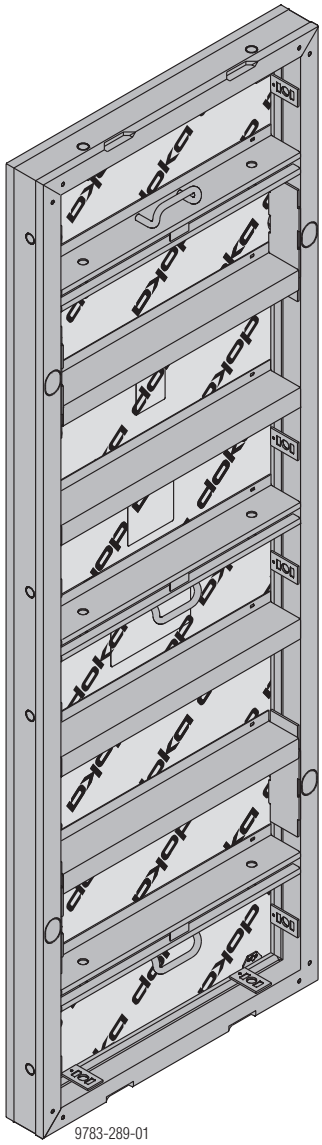
➤ Clean residual concrete off the formwork sheet (see "Cleaning and care").

➤ On gangs that have panel struts and pouring platforms attached to them, first attach this gang to the crane as shown in the illustration, and only then disconnect the floor anchorages of the panel struts.



# Framax Xlife panel in detail

## High load-bearing capacity




GSV
geprüft
durch neutrales Prüfinstitut
Güteschutzverband
Betonschalungen

**1,650 psf (80 kN/m²)** fresh-concrete pressure acting on whole area as defined by DIN 18218, and subject to compliance with the surface planeness tolerances specified in DIN 18202 Table 3 Line 6.

Where the concrete density is 150 pcf (25 kN/m³), this corresponds to a hydrostatic pour-height of 10'-6" (3.20 m).

Also complies with the following rules:

- ACI 117 - "Specifications for Tolerances for Concrete Construction and Materials"
- ACI 347 - "Guide to Formwork for Concrete"
  - Table 3.1: Class of surface "B"

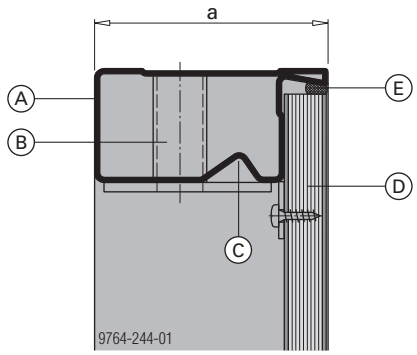
## Clean concrete surfaces with the innovative Xlife sheet

The Xlife sheet consists of a **combination of a traditional plywood core and a novel, innovative plastic coating**.

This combination of materials ensures high numbers of repeat uses, with superb concrete results every time, and reduces the proneness to damage.

- High quality concrete finish
- Less touching-up needed
- Less cleaning work – the Xlife sheet can also be cleaned using a high-pressure washer
- No burst-off plywood chips, and less water is absorbed through nail-holes
- Attached from the rear, so no screw marks on the concrete

## Dimensionally stable, galvanized, powder-coated steel frames

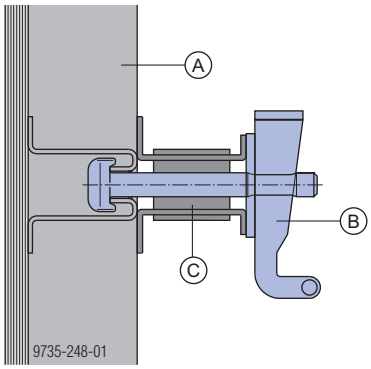



a ... 4 $^{13}/_{16}$" (123 mm)

| | |
|---|---|
| **A** | Frame profile |
| **B** | Cross borehole |
| **C** | Continuous hardware slot for gang connectors |
| **D** | Xlife sheet |
| **E** | Silicone sealing strip |

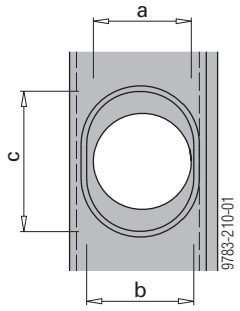
- Dimensionally stable frame profiles
- Strong cross-profiles
- Powder coated, so easy to clean
- Edge faces are easy to clean - so panels always abut tightly
- All-round hardware slot for fastening clamps at any point required
- Hot-dip galvanized for long life
- Edges of formwork sheet are protected by frame profile
- Cross boreholes for corner configurations and bulkheads

## Accessories are easy to fasten, in the integrated waling system




**A** Framax S Xlife panel
**B** Framax wedge clamp
**C** Framax S universal waling

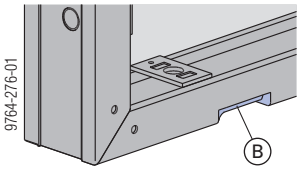
## Form-tie sleeves




a ... diameter 1 $^{5}/_{8}$" (42 mm)
b ... 1 $^{7}/_{8}$" (47 mm)
c ... 2 $^{3}/_{8}$" (61 mm)

- Tie rods are very easy to insert, through the large conical form-tie sleeves
- Only 2 form-ties needed per 2.70 m of panel height

## Setting recess




- Handy setting recess **(B)** (insertion point for a pry bar)

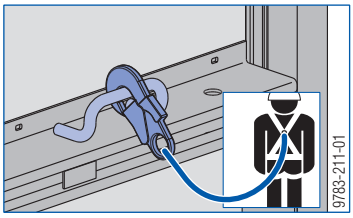
## Attachment points for personal fall arrest equipment

**Note:**
Do not access, get on the formwork or use the safety handles or lifting rings until the panels have been properly braced.

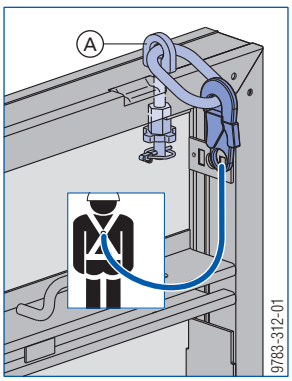
**WARNING**
Do not use the safety handles or lifting rings as slinging points for crane-handling!
Danger of formwork dropping from crane!
➤ Use only suitable load-carrying equipment and slinging points. See "Resetting by crane" and "Transporting, stacking and storing".

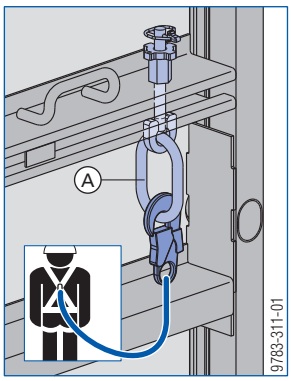
**Note:**
The attachment points shown here for personal fall arrest equipment conform to OSHA requirements.

### Integrated safety handles



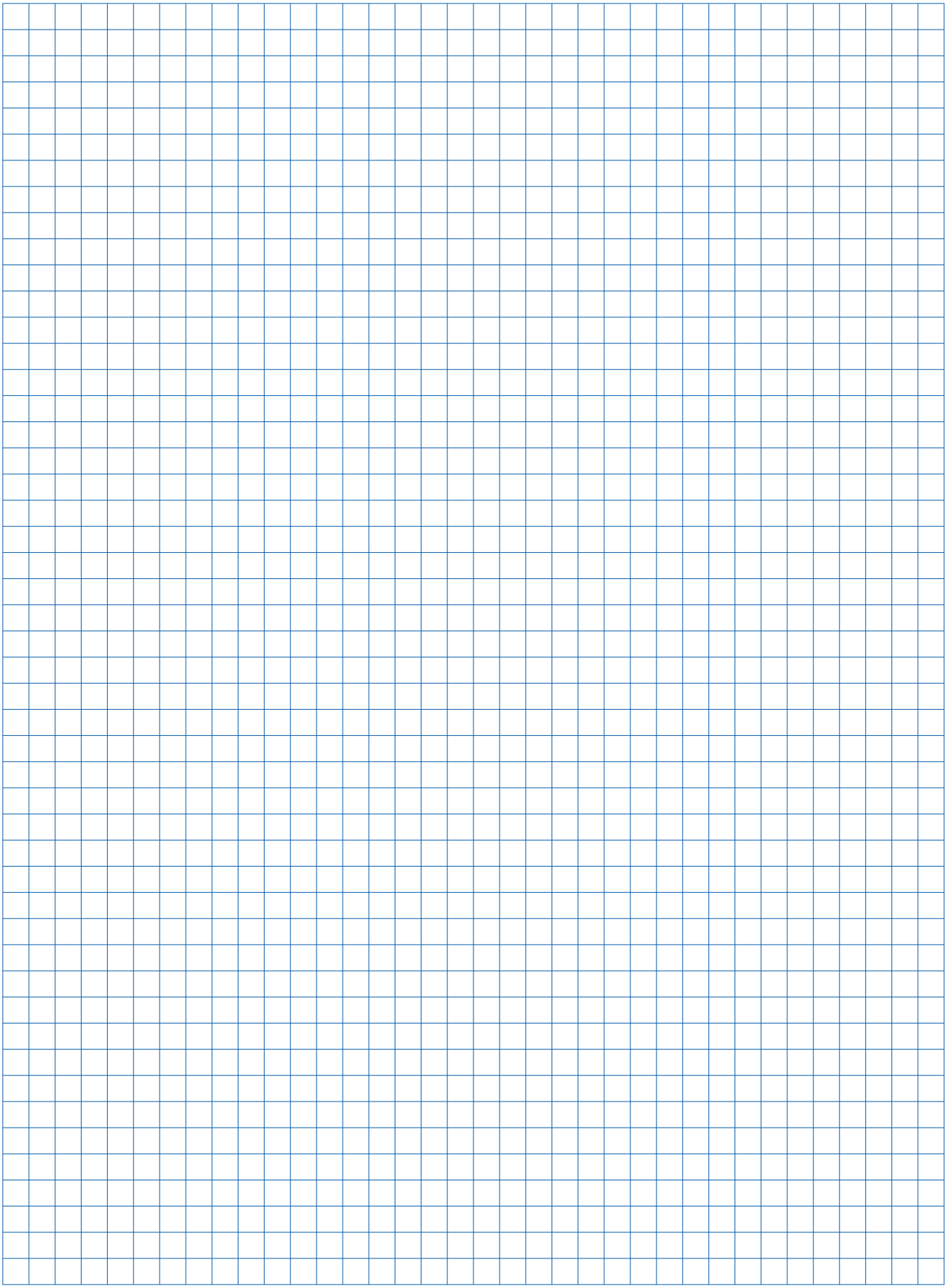

### Additionally mounted attachment points




**A** Lifting ring

**Mounting the lifting ring:**
➤ Mount the lifting ring in the cross borehole and fix it in place with the nut and a linch pin.



# Permissible fresh-concrete pressure as a function of the maximum panel width

| | Max. width of panel | Permitted fresh-concrete pressure $\sigma_{hk, max}$ | |
|---|---|---|---|
| | | **1650 psf (80 kN/m²)** | **2050 psf (100 kN/m²)** |
| **Framax S Xlife panel** | 240 cm (7'-10 1/2") | ✓ | |
| | 135 cm (4'-5 1/8") | ✓ | |
| | 105 cm (3'-5 3/8") | ✓ | ✓ |
| | 90 cm (2'-11 3/8") | ✓ | |
| | 75 cm (2'-5 1/2") | ✓ | ✓ |
| | 60 cm (1'-11 5/8") | ✓ | ✓ |
| | 45 cm (1'-5 3/4") | ✓ | ✓ |
| | 30 cm (11 3/4") | ✓ | ✓ |
| **Framax S Xlife universal panel** | 122 cm (4'-0'') | ✓ | |
| | 90 cm (2'-11 3/8") | ✓ | |

This means that for higher pour-pressures of up to **2050 psf (100 kN/m²)**, it is only allowed to use panels of 105, 75, 60, 45 and 30 cm in width.

**Note:**

All other Framax accessories can be subjected to increased pour-pressures of up to 2050 psf (100 kN/m²) (but only if the approved Framax S panels are used as per the above table).

# System grid

## Framax Xlife panels

**Logical panel size-grid in 6" (15 cm) steps.** The heights and widths of the Framax Xlife panels together result in a logical, advantageous size-grid which makes this formwork highly flexible and economical.

- Easy planning and forming
- Height and width adjustments are made in 6" (15 cm) steps
- Very few fillers needed
- Clear joint pattern

**Only 2 form-ties needed in the vertical.** For pour heights of up to 8'-10" (2.70m) where the 8'-10" (2.70m) high panels are used, only 2 form-ties are needed.

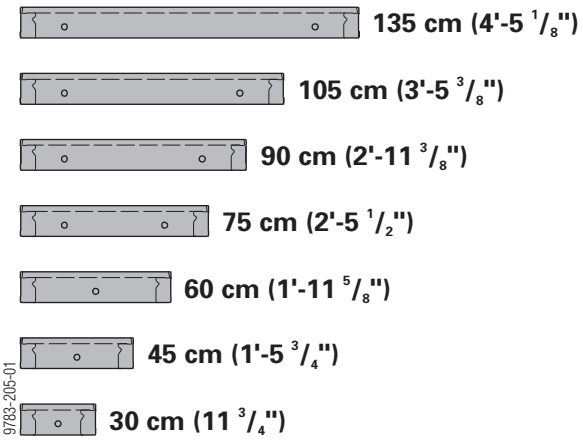
**Wide spacing between form-ties in the horizontal: up to 4'-5" (1.35 m)**

Only

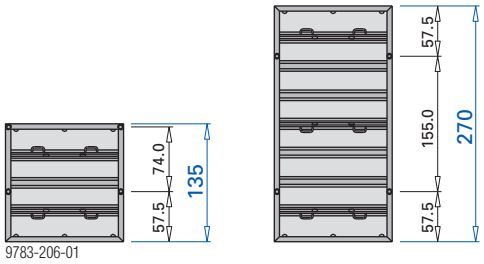
- 7 widths of panel,
- 2 heights of panel and
- 1 extra-large panel

are all you need to cover any plan.

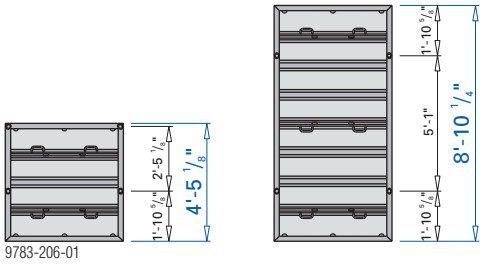
### Widths of panels




### Heights of panels

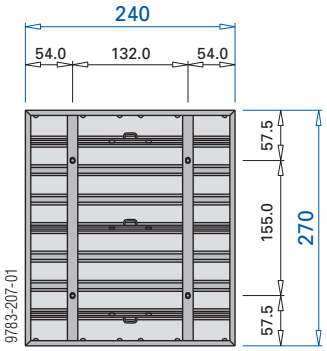



Dimensions in cm

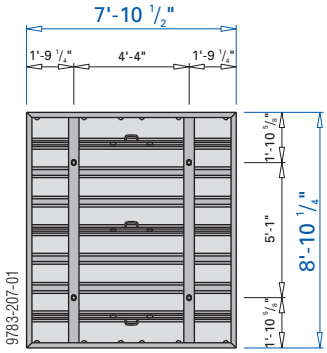



Dimensions in inch

## Extra-large panel




Dimensions in cm

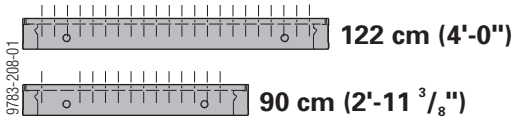



Dimensions in inch

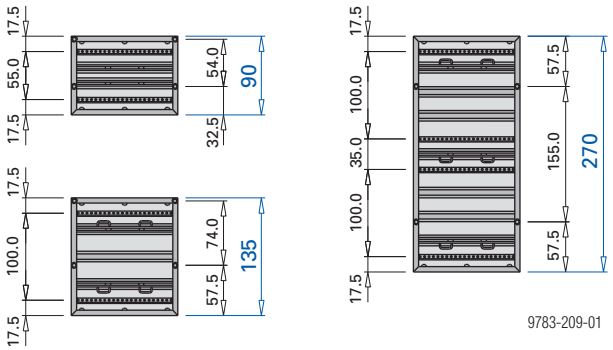
For examples of typical utilizations, see "Vertical stacking of panels".

# Framax Xlife universal panels

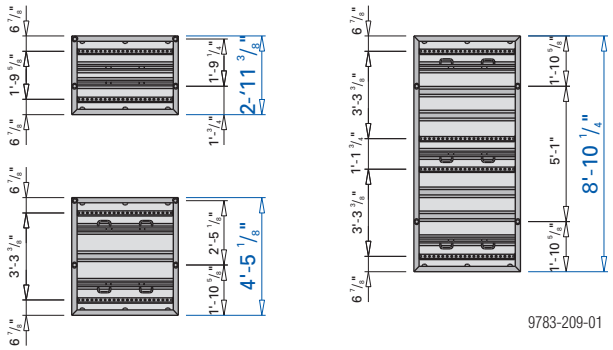
## Widths of panels




## Heights of panels




Dimensions in cm



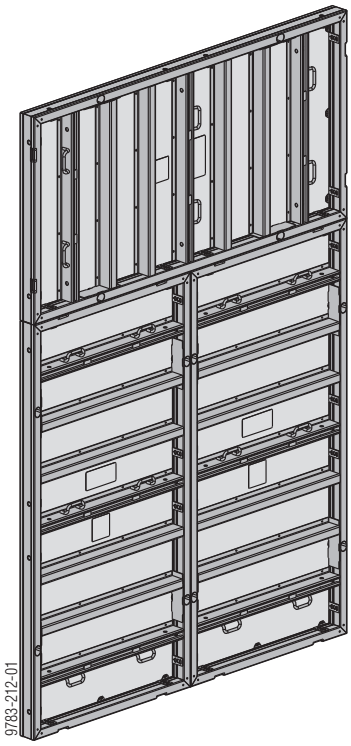

Dimensions in inch

The special hole pattern makes these panels particularly suitable for efficient forming of:

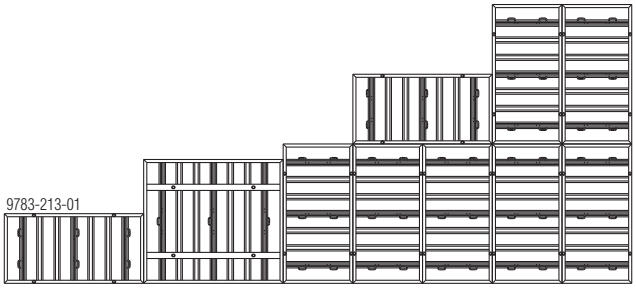
- corners
- wall junctions
- bulkheads
- columns
- pilasters

# Adaptability

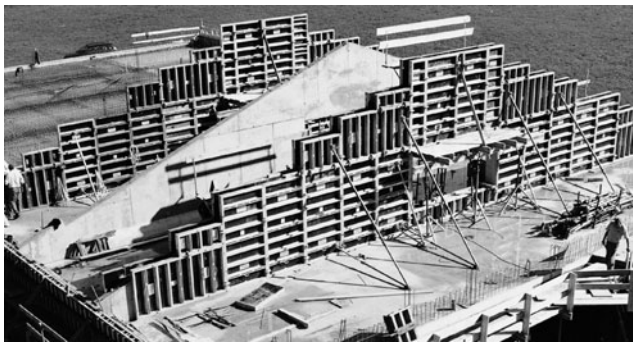
## Possible combinations




Framax Xlife's perfect panel size-grid gives you a huge number of possible combinations, in both width and height. You can use the panels either **upright** or **sideways**, and the **15 cm grid** always gives you optimum adaptability to the dimensions of the structure.

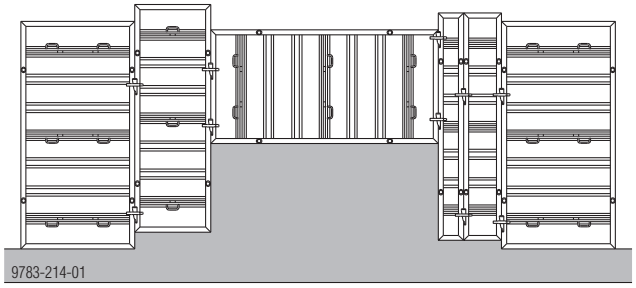



Schematic representation



## Infinite height offset

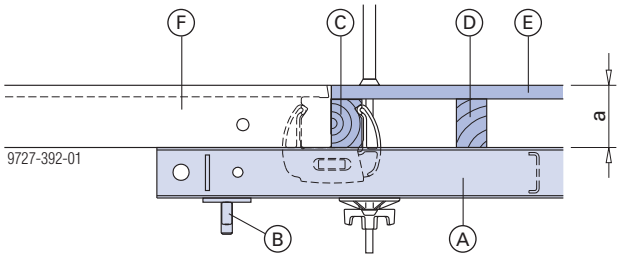
The continuous hardware slot around the inside of the Framax Xlife panels enables the connector components to be fastened anywhere on the frame. This allows any adjacent panels to be **staggered** to **any height required**, i.e. without being confined to any fixed grid. This means that the formwork can easily be accommodated to e.g. steps, slopes and uneven ground, with no extra work.




Schematic representation

# Continue forming with job-built fillers

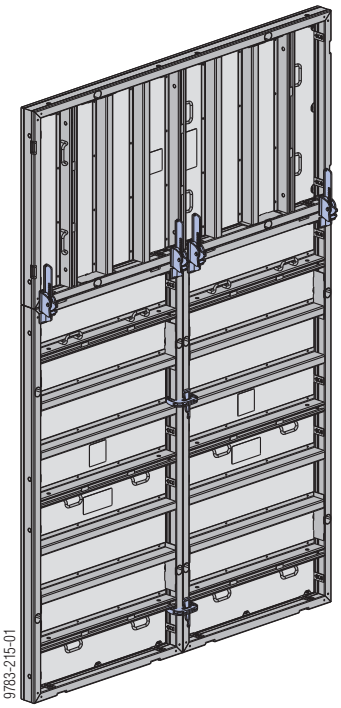
Framax Xlife framed formwork also gives you easy connections when you need to "fill in" with job-built timber formwork. The universal waling and wedge clamp make it easy for you to join the panels to dimensional lumber and formwork sheets.




a ... 4 1/8" (104 mm) dimensional lumber + 3/4" (19 mm) formwork sheet

| | |
|---|---|
| **A** | Framax S universal waling (with nail-holes for easy fastening of dimensional lumber) |
| **B** | Framax wedge clamp |
| **C** | Framax molded timber |
| **D** | Dimensional lumber |
| **E** | Formwork sheet |
| **F** | Framax S Xlife panel |

# Joining gangs




Attributes of the gang connectors:

- provide self-aligning, crane-handling-safe connections between the gangs
- no losable small parts
- dirt-resistant and hard-wearing for site use
- easy to fix, with a formwork hammer

**Important note:**

- Use a formwork hammer weighing max. 32 oz. (800 g).
- Do not oil or grease wedge-clamped joints.

**Upright panels:**

| Panel height | N° of clamps |
|---|---|
| 1.35 m | 2 |
| 2.70 m | 2 |

**Horizontal panels:**

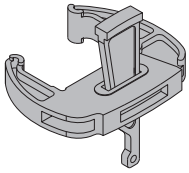
| Panel width | N° of clamps |
|---|---|
| 0.30 m | 1 |
| 0.45 m | 1 |
| 0.60 m | 2 |
| 0.75 m | 2 |
| 0.90 m | 2 |
| 1.05 m | 2 |
| 1.35 m | 2 |

For details regarding extra inter-panel connections for outside corners and bulkheads (for increased tensile loads): see "Inter-panel connections for increased tensile loads".

See "Vertical stacking of panels" for the positions of the Framax quick-acting clamps RU and Framax multi-function clamps that are needed when stacking.

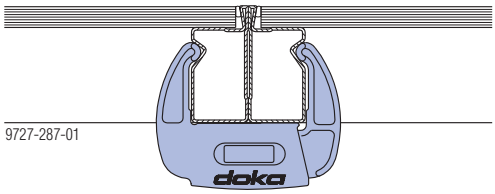
## Simple inter-panel connections

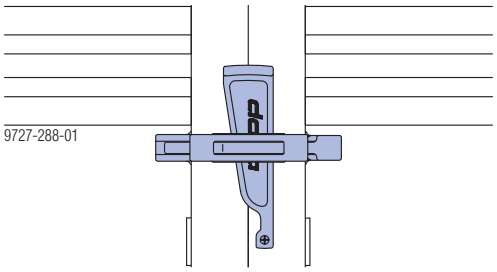
### with the Framax quick-acting clamp RU



**Framax quick-acting clamp RU:**
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 1.35 kip (6.0 kN)
Permitted moment: 0.37 kip-ft (0.5 kNm)

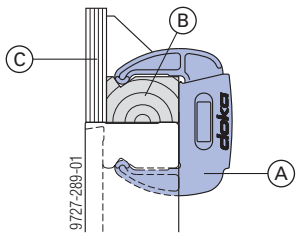
The continuous hardware slot running around the inside of the frame profile means that panels can be fastened together anywhere on the frame. This allows adjacent panels to be staggered in height, infinitely.




**More functions**

**Vertical stacking with molded timber**



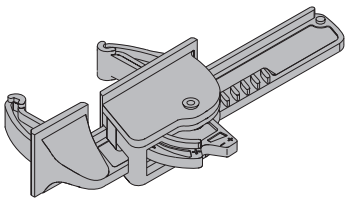

**A** Framax quick-acting clamp RU

**B** Framax molded timber 27mm (for 27mm formwork sheet) or Framax molded timber 21mm (for 21mm formwork sheet) or Framax molded timber 18mm (for 3/4" formwork sheet)

**C** Formwork sheet

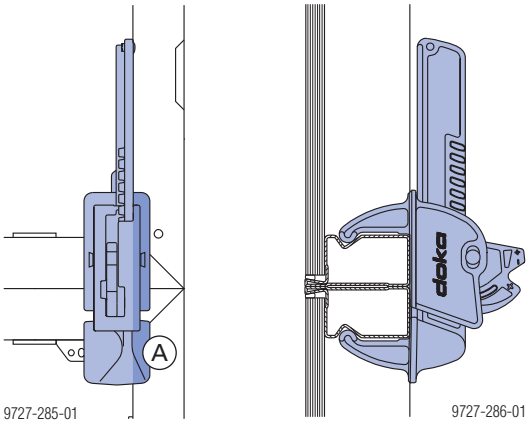
# Self-aligning inter-panel connections and fillers

## with Framax multi-function clamp



**Framax multi-function clamp:**
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 2.02 kip (9.0 kN)
Permitted moment: 0.66 kip-ft (0.9 kNm)
Values apply only when mounted on profile.

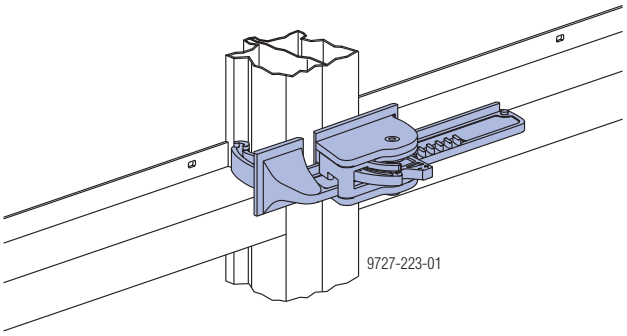
Particularly with stacking joints, the fact that the clamp bears directly on the profiles means that there is no need for any extra bracing of the panels with universal walings.




**A** Bearing surface on the profile

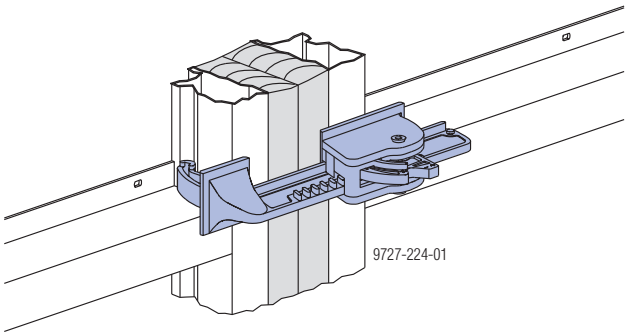
## More functions

### Inter-panel connections



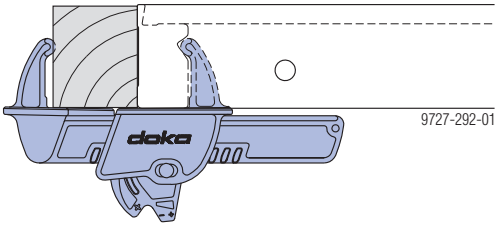

Joining the panels using the Framax multi-function clamp provides additional bracing of the gang-form (as the clamp bears directly onto the profile).

### Filler joints up to 6" (15 cm)

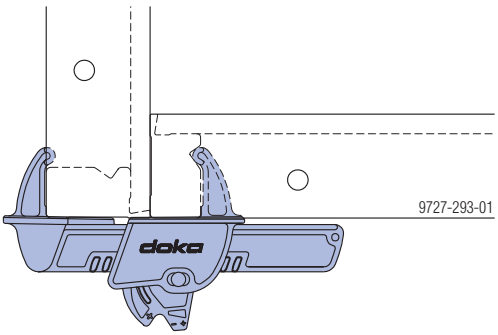


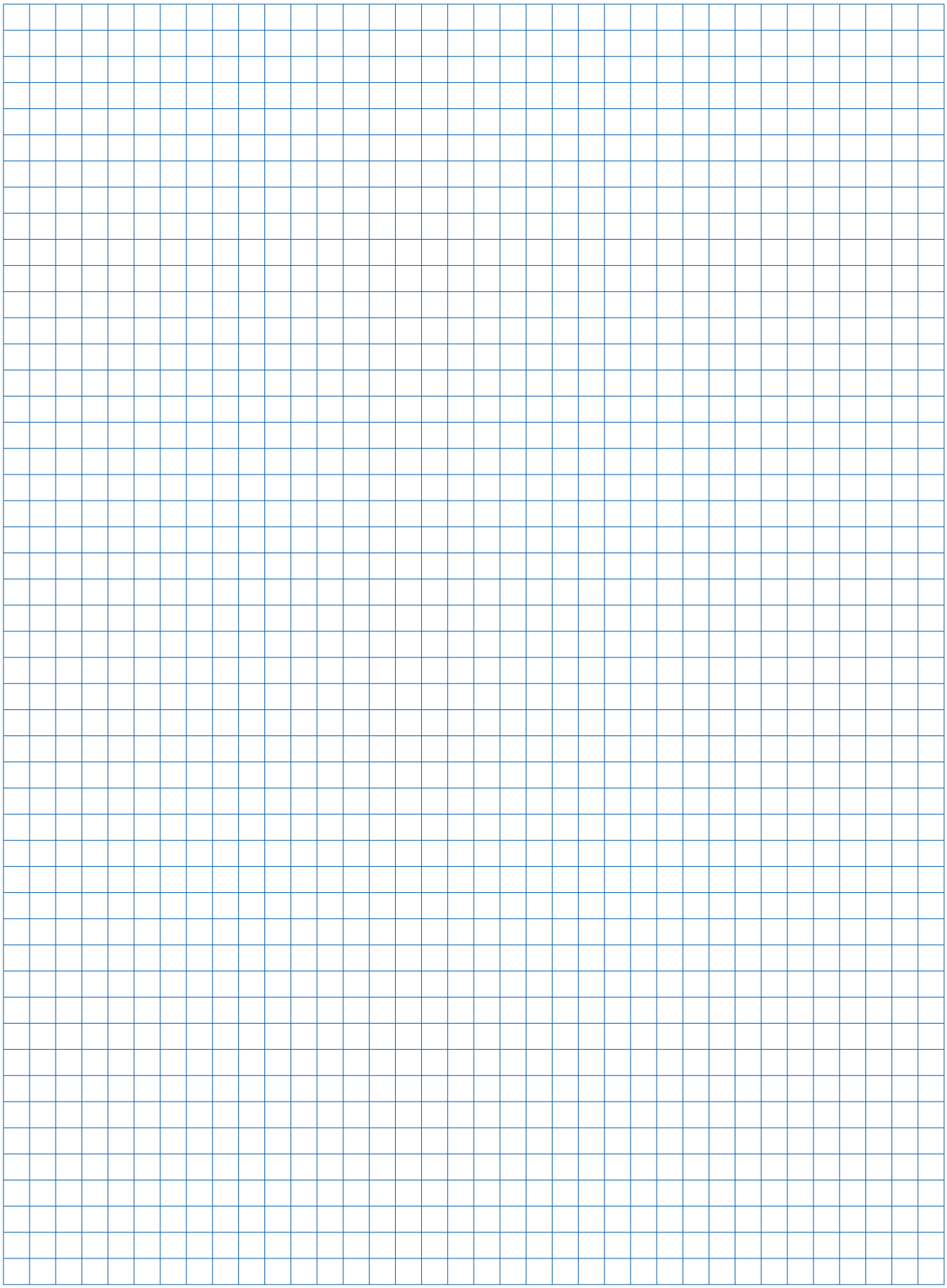

With its 6" (15 cm) clamping range, the Framax multi-function clamp matches the panel size-grid exactly.
For more information, see "Length adjustment using fillers".

### Timber joints up to 8" (20 cm)



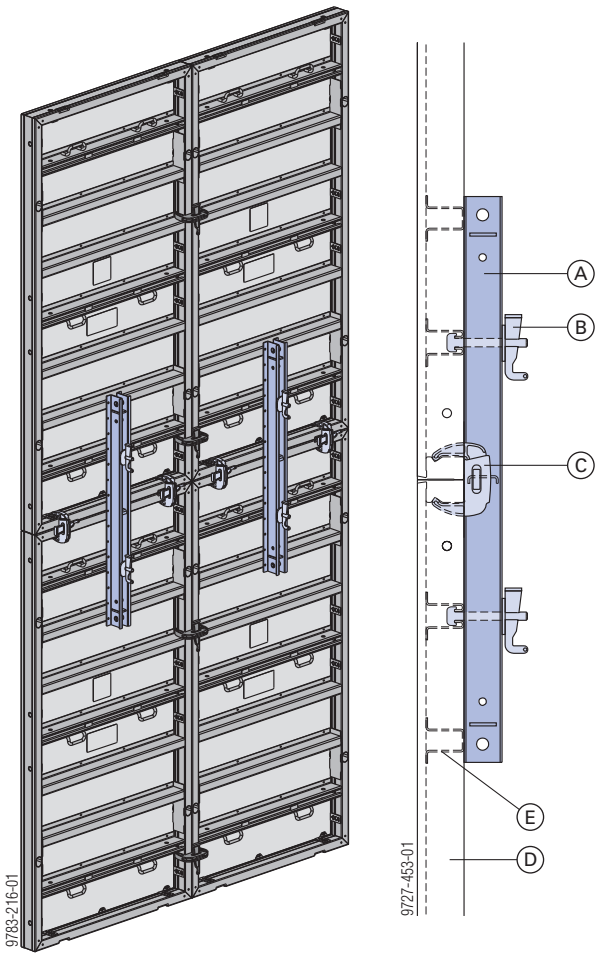

### Corner joints on footings





# Bracing the gangs

## Framax universal waling




**A** Framax S universal waling 1.50m
**B** Framax wedge clamp
**C** Framax quick-acting clamp RU
**D** Framax S Xlife panel
**E** Cross profile as bearing surface for universal waling

On **job-built fillers**, the universal walings bring the gang-forms firmly into alignment and transfer the form-tie forces to the framed panels.

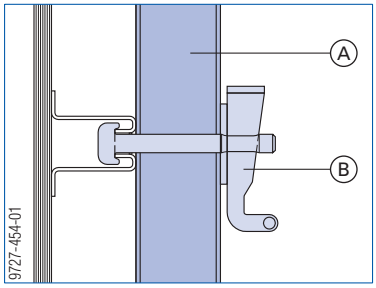
Using additional universal walings gives gang-forms better rigidity, especially in **higher stacking configurations**. This makes it possible to pick up and set down large gang-forms by crane with no problems. The additional universal walings are also useful for transferring the loads from platforms.

**Note:**
Instead of the universal waling, it is also possible to use a Multi-purpose waling WS10 Top50.

**Framax S universal waling:**
Permitted moment (for vertical stacking):
3.7 kip-ft (5.0 kNm)
Due to the permitted tensile load of 3.15 kip (14 kN) in the waling profile of the panel, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to: Permitted moment 3.7 kip-ft (5.0 kNm)

## Fixing methods

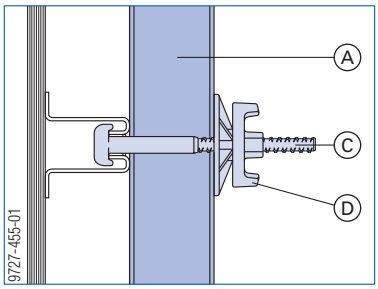
### with Framax wedge clamp




**A** Framax S universal waling
**B** Framax wedge clamp

Do not oil or grease wedge-clamped joints.

### with Framax universal fixing bolt and Super-plate




**A** Framax S universal waling
**C** Framax universal fixing bolt
**D** Super-plate 15.0

# Vertical stacking of panels

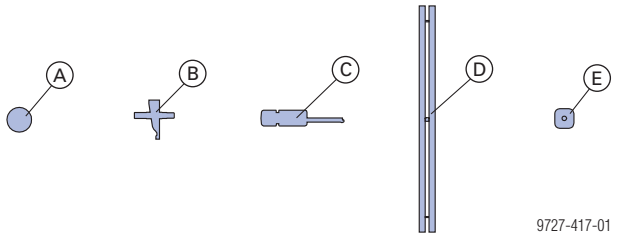
**Positions of the interconnecting and form-tie components and accessories needed for:**

- lifting and setting down
- crane-handling
- platform loads
- pouring

**Framax quick-acting clamp RU:**
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 1.35 kip (6.0 kN)
Permitted moment: 0.37 kip-ft (0.5 kNm)

**Framax multi-function clamp:**
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 2.02 kip (9.0 kN)
Permitted moment: 0.66 kip-ft (0.9 kNm)
Values apply only when mounted on profile.

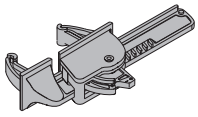
**Framax S universal waling:**
Permitted moment (for vertical stacking):
3.7 kip-ft (5.0 kNm)
Due to the permitted tensile load of 3.15 kip (14 kN) in the waling profile of the panel, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to: Permitted moment 3.7 kip-ft (5.0 kNm)




| | |
|---|---|
| **A** | Tie-rod + Super-plate |
| **B** | Framax quick-acting clamp RU |
| **C** | Framax multi-function clamp |
| **D** | Framax S universal waling |
| **E** | Framax wedge clamp |

## Rules for vertical stacking

### with Framax multi-function clamp



**Formwork heights up to 13’-4" (4.05 m)**

- On each horizontal panel joint, 2 multi-function clamps are attached for each panel (max. 1.35 m).

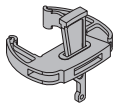
**Formwork heights up to 17’-9" (5.40 m)**

- On each horizontal panel joint, 1 universal waling and 2 multi-function clamps are attached for each panel (max. 1.35 m).
  Exception:
  A horizontal panel placed at the top of the gang does not need a universal waling.
  All other horizontal panels need only 1 universal waling per 2.70 m of formwork height.

**Formwork heights up to 26’-7" (8.10 m)**

- On each horizontal panel joint, 1 universal waling and 2 multi-function clamps are attached for each panel (max. 1.35 m).
  Exception:
  A horizontal panel placed at the top of the gang needs only 1 universal waling per 2.70 m of formwork height.

### with the Framax quick-acting clamp RU



**Formwork heights up to 12’-4" (3.75 m)**

- On each horizontal panel joint, 2 quick-acting clamps RU are attached for each panel (max. 1.35 m).

**Formwork heights up to 17’-9" (5.40 m)**

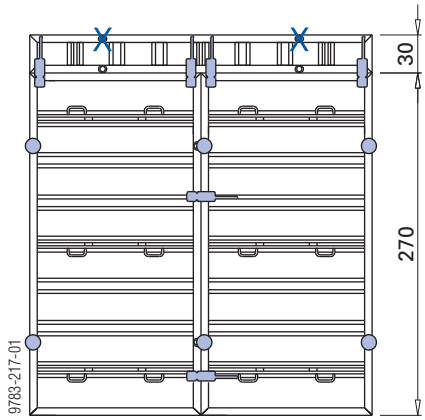
- On each horizontal panel joint, 1 universal waling and 2 quick-acting clamps RU are attached for each panel (max. 1.35 m).
  Exception:
  A horizontal panel with a width of up to 0.60 m placed at the top of the gang does not need a universal waling.
  A horizontal panel with a width of over 0.60 m placed at the top of the gang needs only 1 universal waling per 2.70 m of formwork height.

**Formwork heights up to 26’-7" (8.10 m)**

- On each horizontal panel joint, 1 universal waling and 2 quick-acting clamps RU are attached for each panel (max. 1.35 m).
  Exception:
  A horizontal panel with a width of up to 0.90 m placed at the top of the gang needs only 1 universal waling per 2.70 m of formwork height.

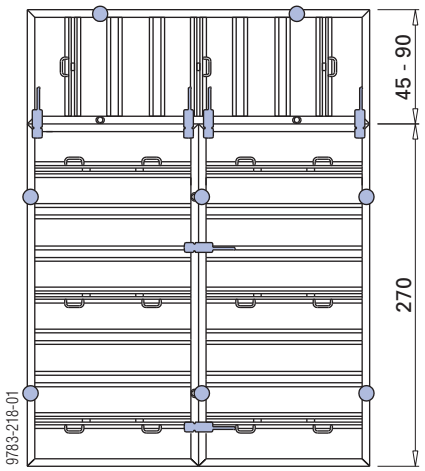
## with Framax multi-function clamp

**Formwork height:**
**9’-10" (300 cm)**

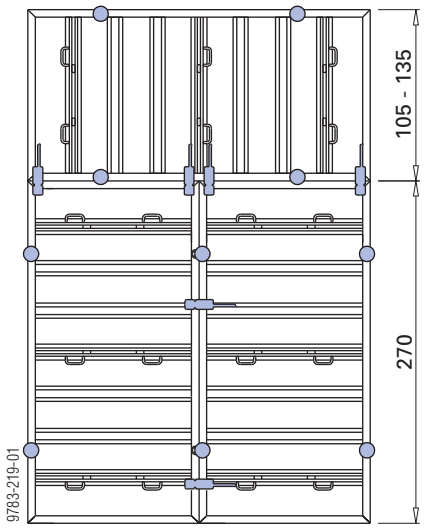



**X** ... When pouring platforms are to be used, also place form-ties at the top edge of the formwork.

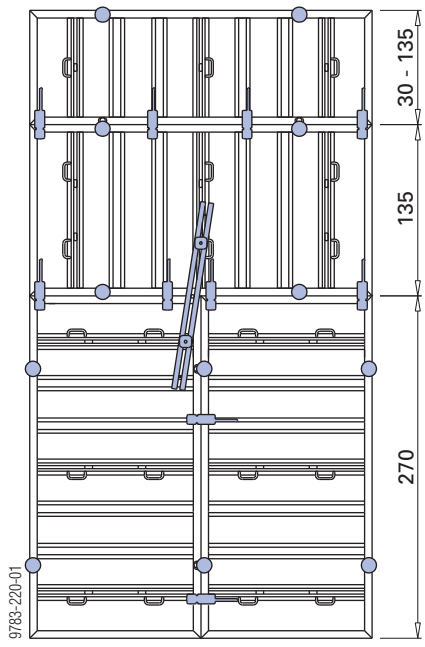
**Formwork height:**
**10’-4" to 11’-10"**
**(315 cm to 360 cm)**



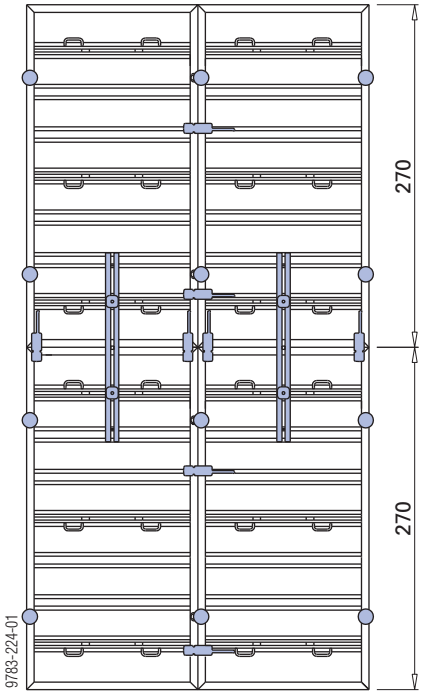

**Formwork height:**
**12’-4" (375 cm)**
**13’-4" (405 cm)**



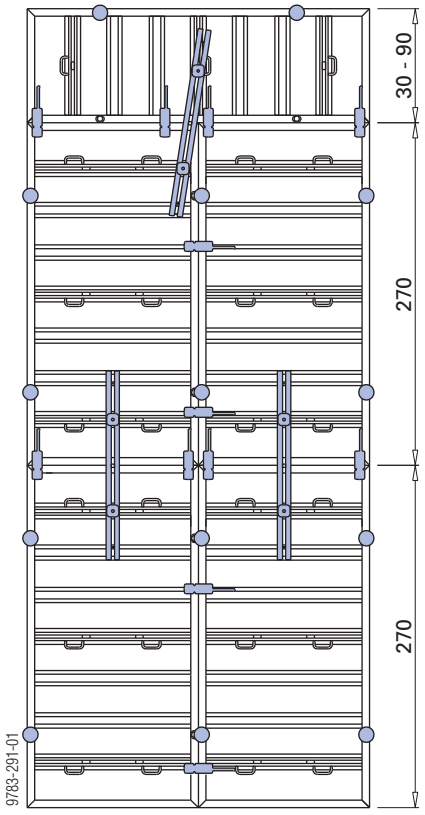

**Formwork height:**
**14’-3" to 17’-9"**
**(435 cm to 540 cm)**



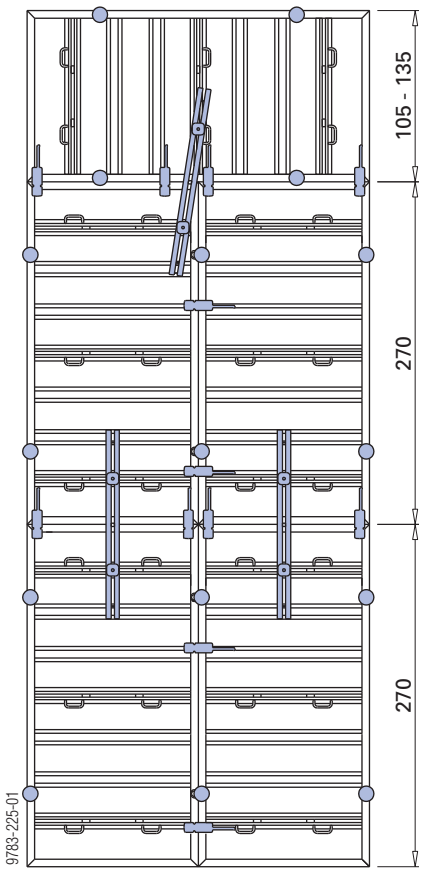

**Formwork height:**
**17’-9" (540 cm)**



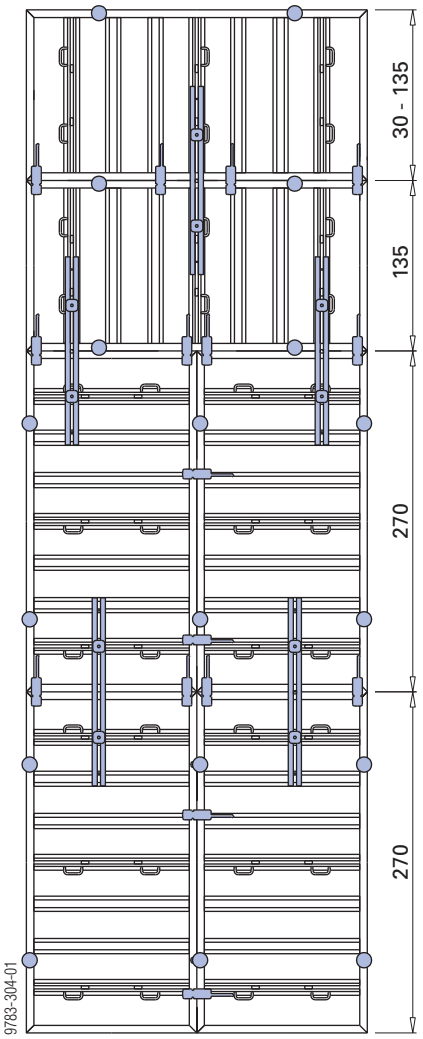

**Formwork height:**
**18’-8" to 20’-8"**
**(570 cm to 630 cm)**



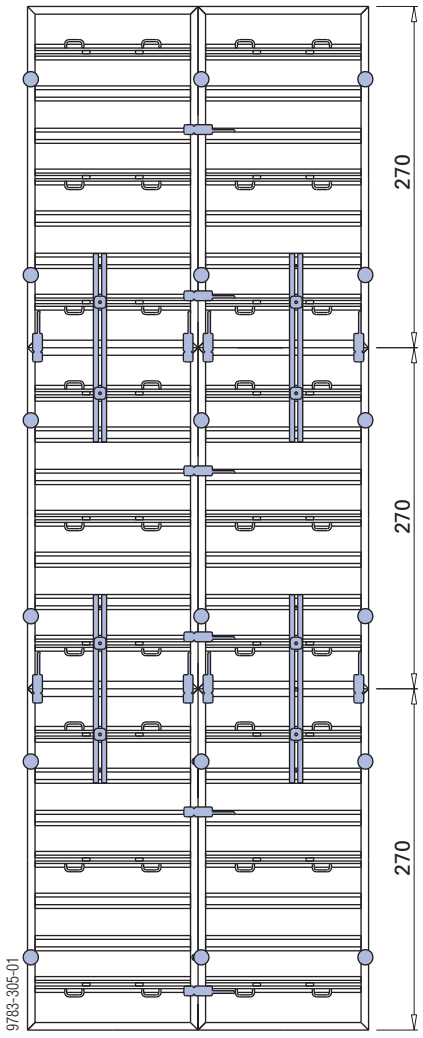
**Formwork height:**
**21’-2" (645 cm)**
**22’-2" (675 cm)**



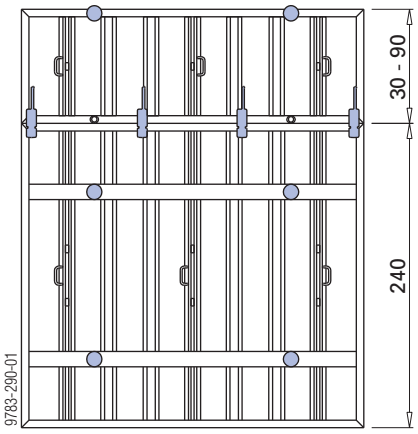

**Formwork height:**
**23’-1" to 26’-7"**
**(705 cm to 810 cm)**



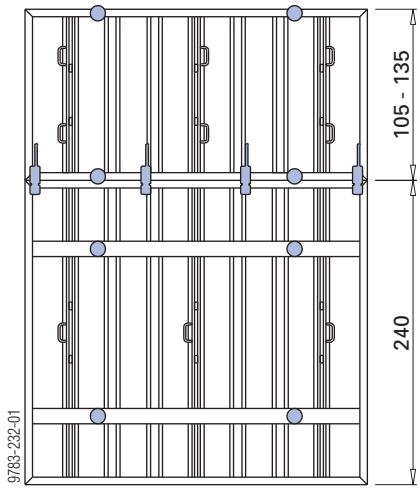

**Formwork height:**
**26’-7" (810 cm)**



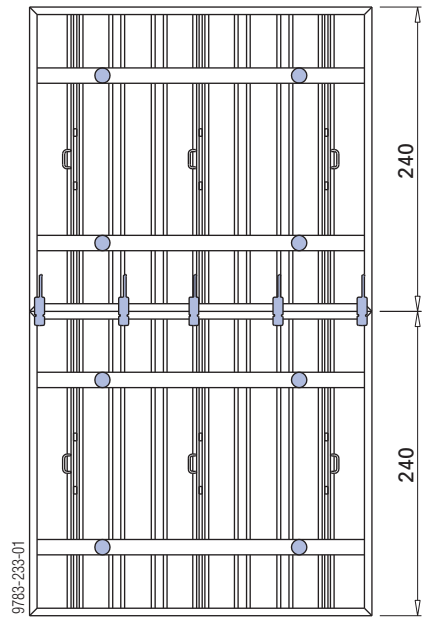
**Formwork height:**
**8’-10" to 10’-10"**
**(270 cm to 330 cm)**



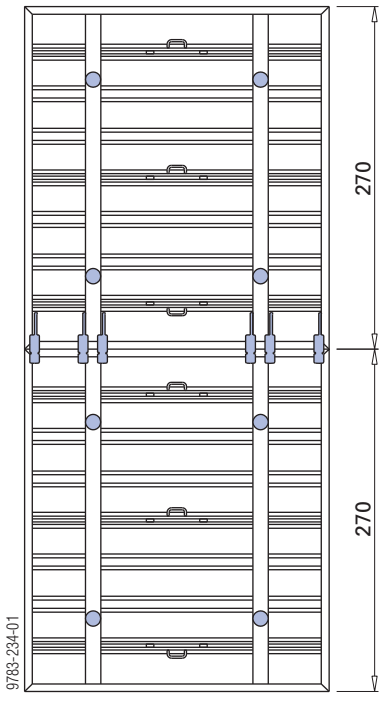

**Formwork height:**
**11’-4" (345 cm)**
**12’-4" (375 cm)**




**Formwork height:**
**15’-9" (480 cm)**

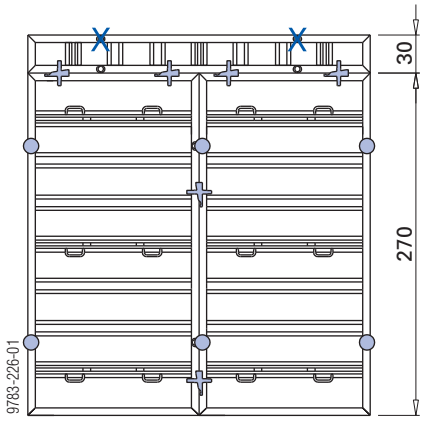



**Formwork height:**
**17’-9" (540 cm)**



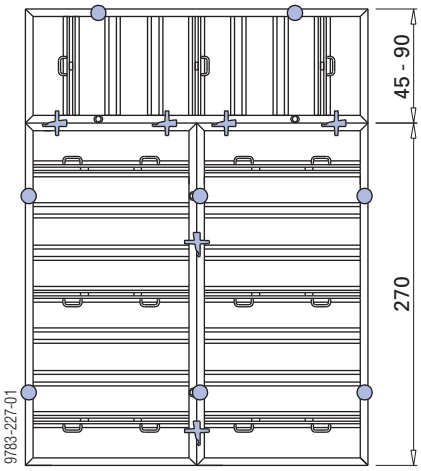
# with the Framax quick-acting clamp RU

**Formwork height:**
**9’-10" (300 cm)**

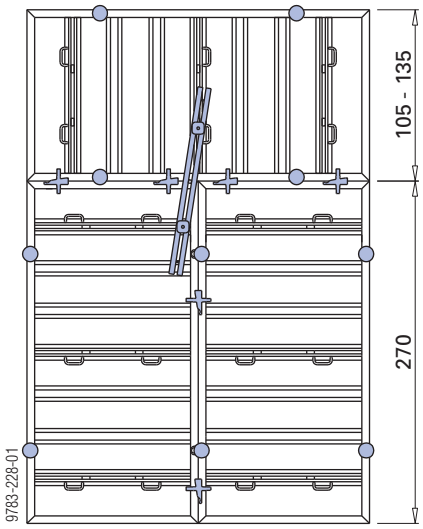



**X** ... When pouring platforms are to be used, also place form-ties at the top edge of the formwork.

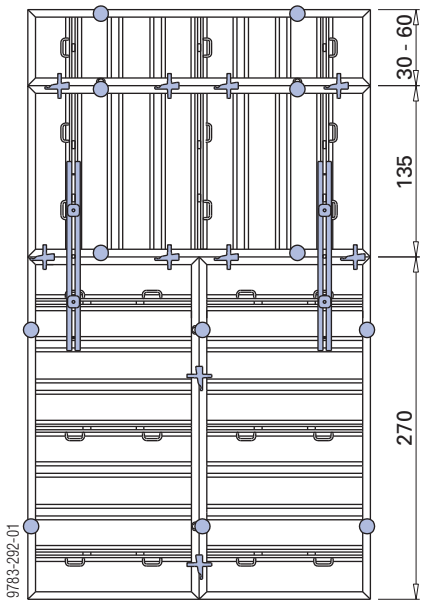
**Formwork height:**
**10’-4" to 11’-10"**
**(315 cm to 360 cm)**



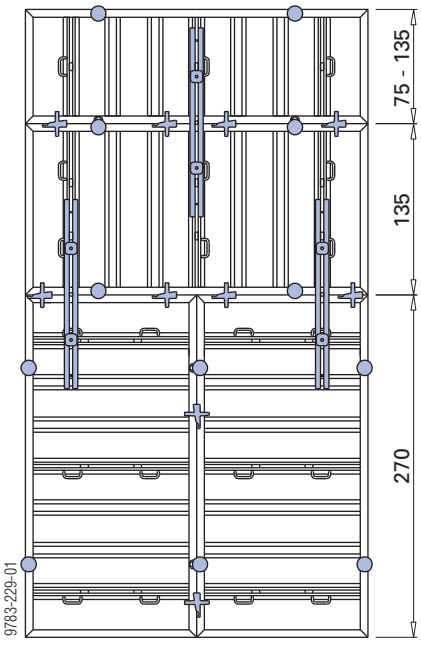

**Formwork height:**
**12’-4" (375 cm)**
**13’-4" (405 cm)**



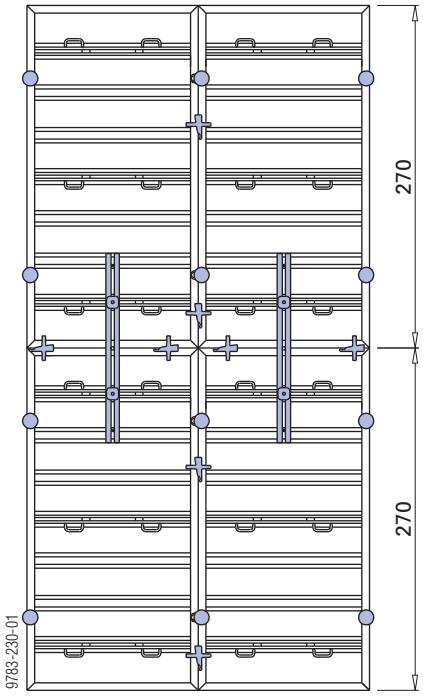

**Formwork height:**
**14’-3" to 15’-3"**
**(435 cm to 465 cm)**



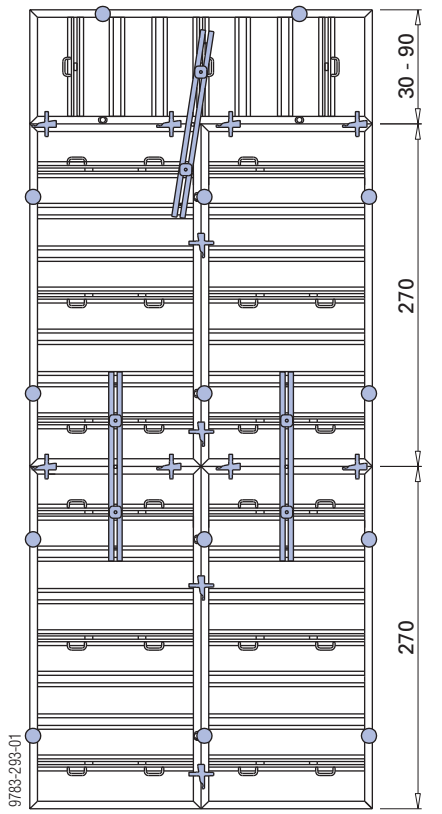

**Formwork height:**
**15’-9" to 17’-9"**
**(480 cm to 540 cm)**



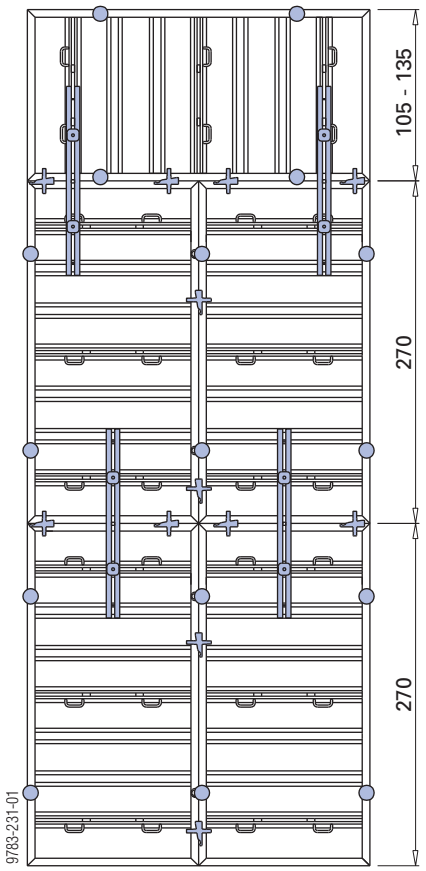

**Formwork height:**
**17’-9" (540 cm)**



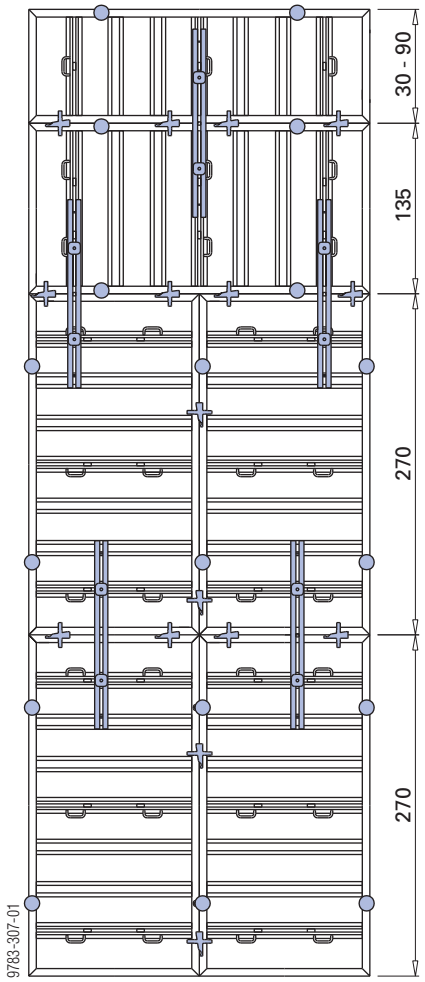
**Formwork height:**
**18’-8" to 20’-8"**
**(570 cm to 630 cm)**



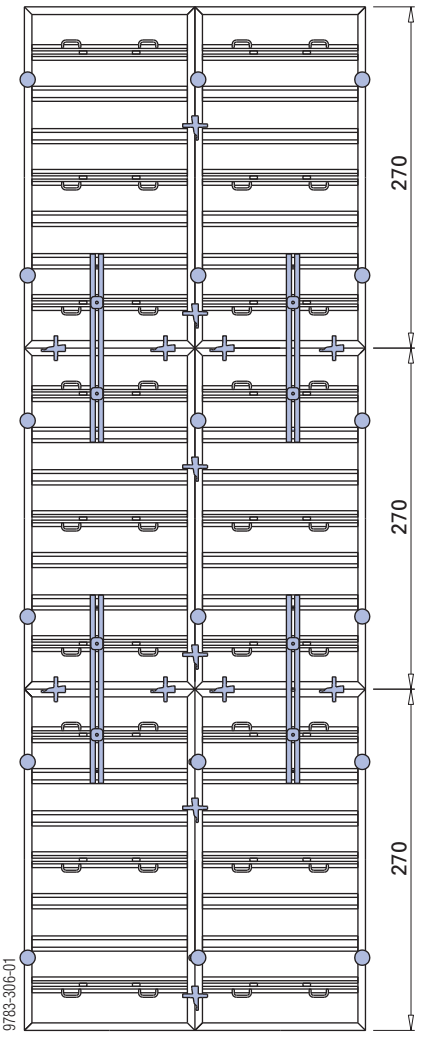

**Formwork height:**
**21’-2" (645 cm)**
**22’-2" (675 cm)**



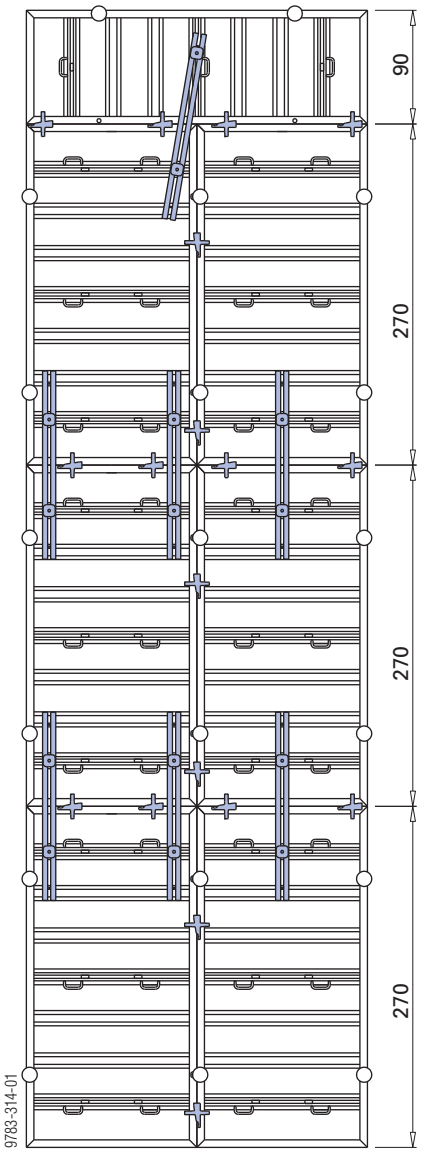

**Formwork height:**
**23’-1" to 25’-1"**
**(705 cm to 765 cm)**



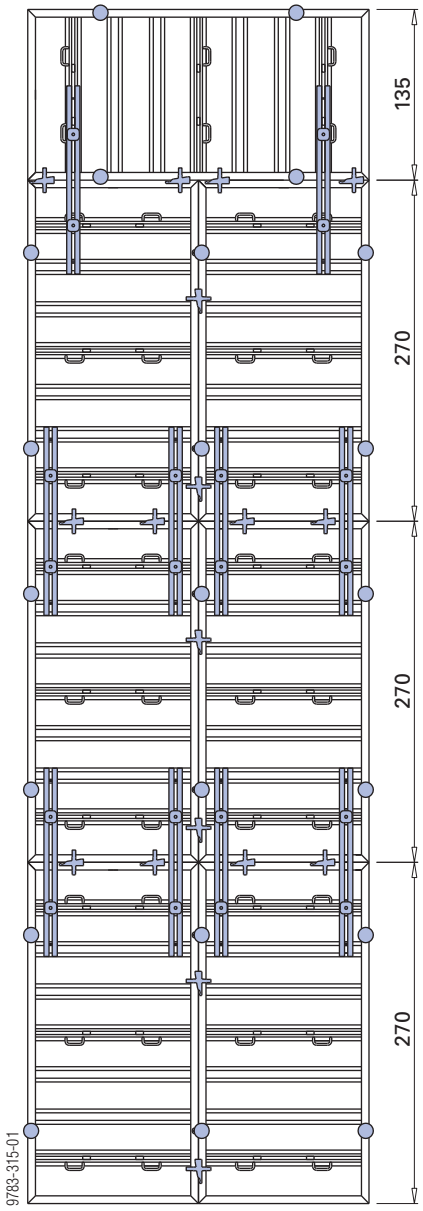
**Formwork height:**
**26’-7" (810 cm)**



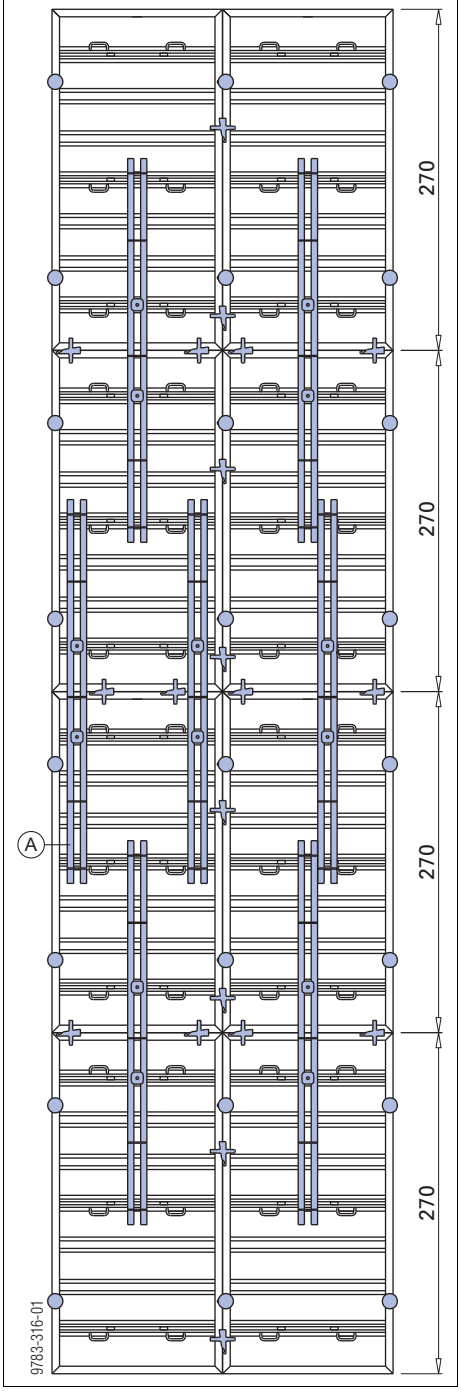

**Formwork height:**
**29’-6" (900 cm)**




**Formwork height:**
**31’-0" (945 cm)**

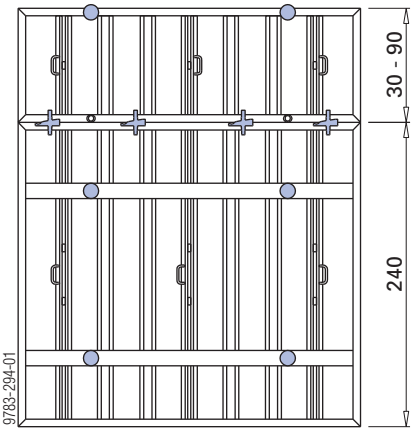


**Formwork height:**
**35’-5" (1080 cm)**

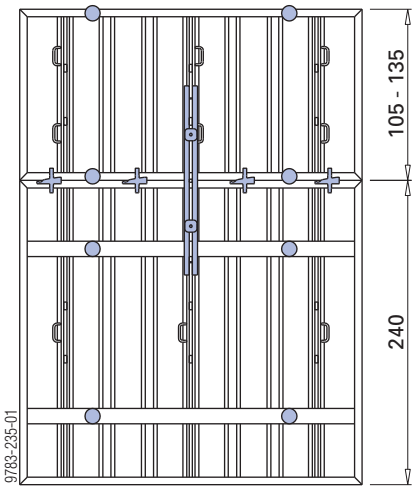



**A** Multi-purpose waling WS10 Top50 10’-0" (300 cm)

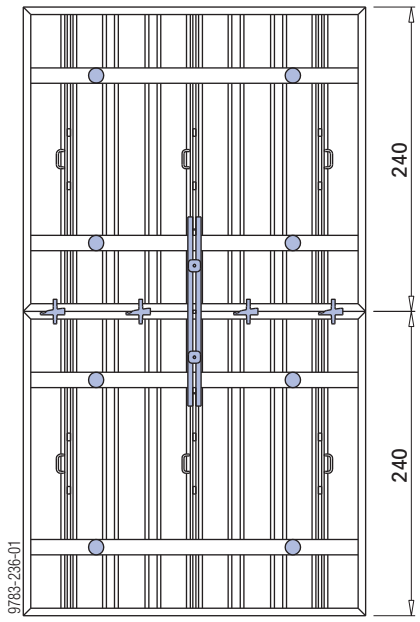
**Formwork height:**
**8’-10" to 10’-10"**
**(270 cm to 330 cm)**



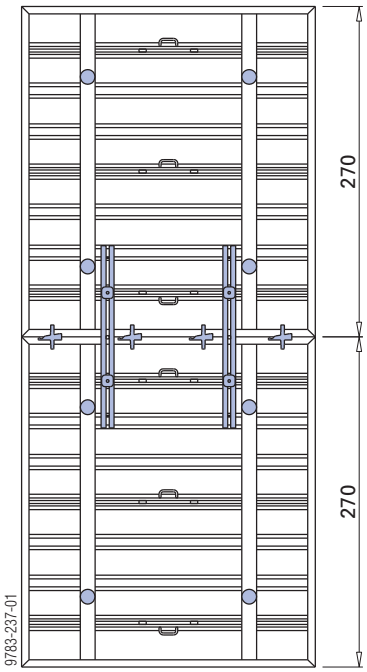

**Formwork height:**
**11’-4" (345 cm)**
**12’-4" (375 cm)**




**Formwork height:**
**15’-9" (480 cm)**

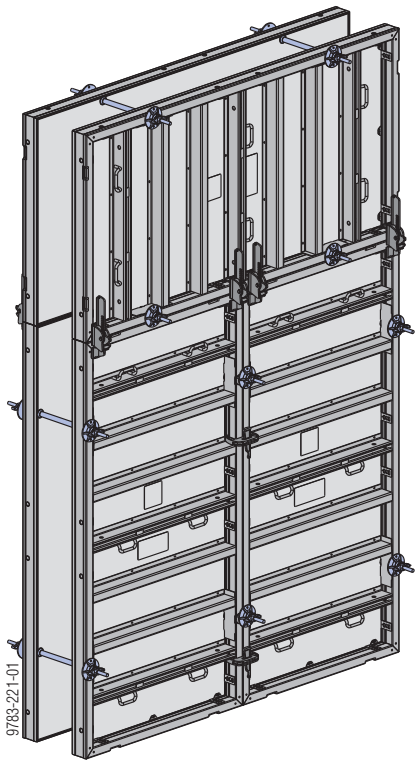



**Formwork height:**
**17’-9" (540 cm)**



# Tie-rod system using Super-plates 20.0 B

## Tying the panels in the frame profile



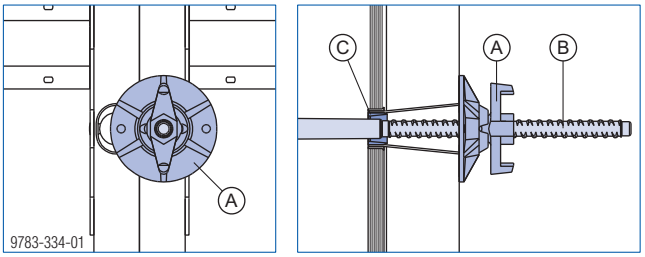

**The basic rule is:**

Place a form-tie in every form-tie hole that is not covered by a Super-plate (e.g. at a panel joint, only tie one of the two adjoining panels).

If the tie-rod system is used with Super-plates 20.0 B, a reducer sleeve must be fitted in every form-tie hole.

Always tie in the bigger (wider) of the two panels.

For exceptions, see "Length adjustment using fillers" and "Vertical stacking of panels".




**A** Super-plate 20.0 B
**B** She-bolt or taper tie
**C** Reducer sleeve

**WARNING**
Sensitive rod steel!
- ➤ Never weld or heat tie-rods.
- ➤ Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.
- ➤ Only use approved tie-rods.

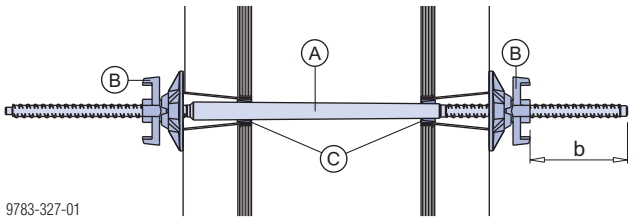
Close off any unneeded form-tie sleeves with **Framax S frame hole plugs 44**.

**Note:**
Doka also offers economical solutions for creating watertight wall-ties.

For more information, see the User Information booklet "Doka form-ties for special requirements".

# Taper-tie system 1 1/4"-1" & 7/8" [20.0]

**Sale item only!**



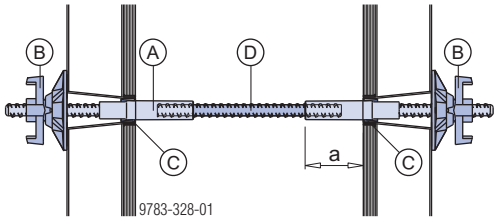

**A** Taper tie 1 1/4"-1" & 7/8" [20.0] E
**B** Super-plate 20.0 B
**C** Reducer sleeve

| Wall thickness | Taper-tie size | Dimension 'b' |
|---|---|---|
| 8" to 11" (20.3 to 28.0 cm) | 43" | 9 3/4" (24.8 cm) |
| 11" to 14" (28.0 to 35.6 cm) | | 6 3/4" (17.1 cm) |
| 14" to 17" (35.6 to 43.2 cm) | 49" | 9 3/4" (24.8 cm) |
| 17" to 20" (43.2 to 50.8 cm) | | 6 3/4" (17.1 cm) |
| 20" to 23" (50.8 to 58.4 cm) | 55" | 9 3/4" (24.8 cm) |
| 23" to 26" (58.4 to 66.0 cm) | | 6 3/4" (17.1 cm) |
| 26" to 29" (66.0 cm to 73.7 cm) | 61" | 9 3/4" (24.8 cm) |
| 29" to 32" (73.7 cm to 81.3 cm) | | 6 3/4" (17.1 cm) |
| 32" to 35" (81.3 to 88.9 cm) | 67" | 9 3/4" (24.8 cm) |
| 35" to 38" (88.9 to 96.5 cm) | | 6 3/4" (17.1 cm) |
| 38" to 41" (96.5 to 104.1 cm) | 73" | 9 3/4" (24.8 cm) |
| 41" to 44" (104.1 to 111.8 cm) | | 6 3/4" (17.1 cm) |
| 44" to 47" (111.8 to 119.4 cm) | 79" | 9 3/4" (24.8 cm) |
| 47" to 50" (119.4 to 127.0 cm) | | 6 3/4" (17.1 cm) |

**Taper tie 1 1/4"-1" & 7/8" [20.0] E**
Permitted capacity allowing a 2 : 1 factor of safety against failure:
32,500 lbs (145 kN)

# She-bolt system 7/8"

**Sale item only!**




a ... 4" (10.2 cm)

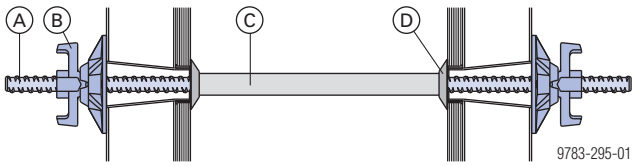
**A** She-bolt 7/8"
**B** Super-plate 20.0 B
**C** Reducer sleeve
**D** Coil rod 1" or Tie-rod 20.0

**Required length of she-bolt:**

| | She-bolt |
|---|---|
| Tie fixed directly on frame profile | 7/8"x**13"** |
| Tie passes through universal waling | 7/8"x**20"** |
| Special applications | 7/8"x**24"** |

**She-bolt system 7/8":**
Permitted capacity allowing a 2 : 1 factor of safety against failure:
37,500 lbs (166 kN)

# The Doka form-tie system 20.0




**A** Tie-rod 20.0mm
**B** Super-plate 20.0 B
**C** Plastic tube 26mm
**D** Framax S universal cone 1"

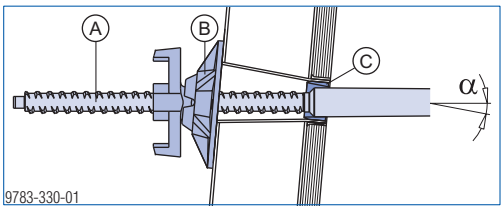
The "Plastic tubes 26mm" left behind in the concrete are closed off with **"Plugs 26mm"**.

**Tie-rod 20.0mm:**
Permitted capacity, allowing a 2 : 1 factor of safety:
38,000 lbs (169 kN)

**Spanner for tie-rod 15.0/20.0**
For turning and holding the tie-rods.

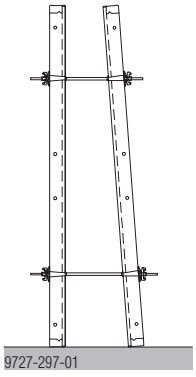
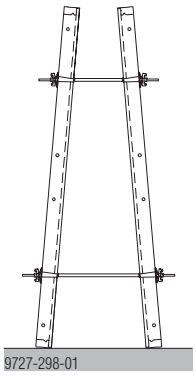
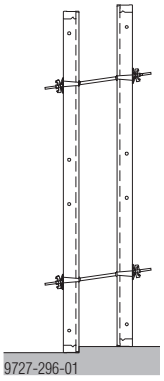
# Sloping ties on height-mismatched panels

Thanks to their large, conical form-tie sleeves, the panels can be inclined on one or both sides, and/or height-mismatched.




α ... max. 5° (on diam. 1 ¼" tie-rods)
... max. 8° (on diam. 1" tie-rods)

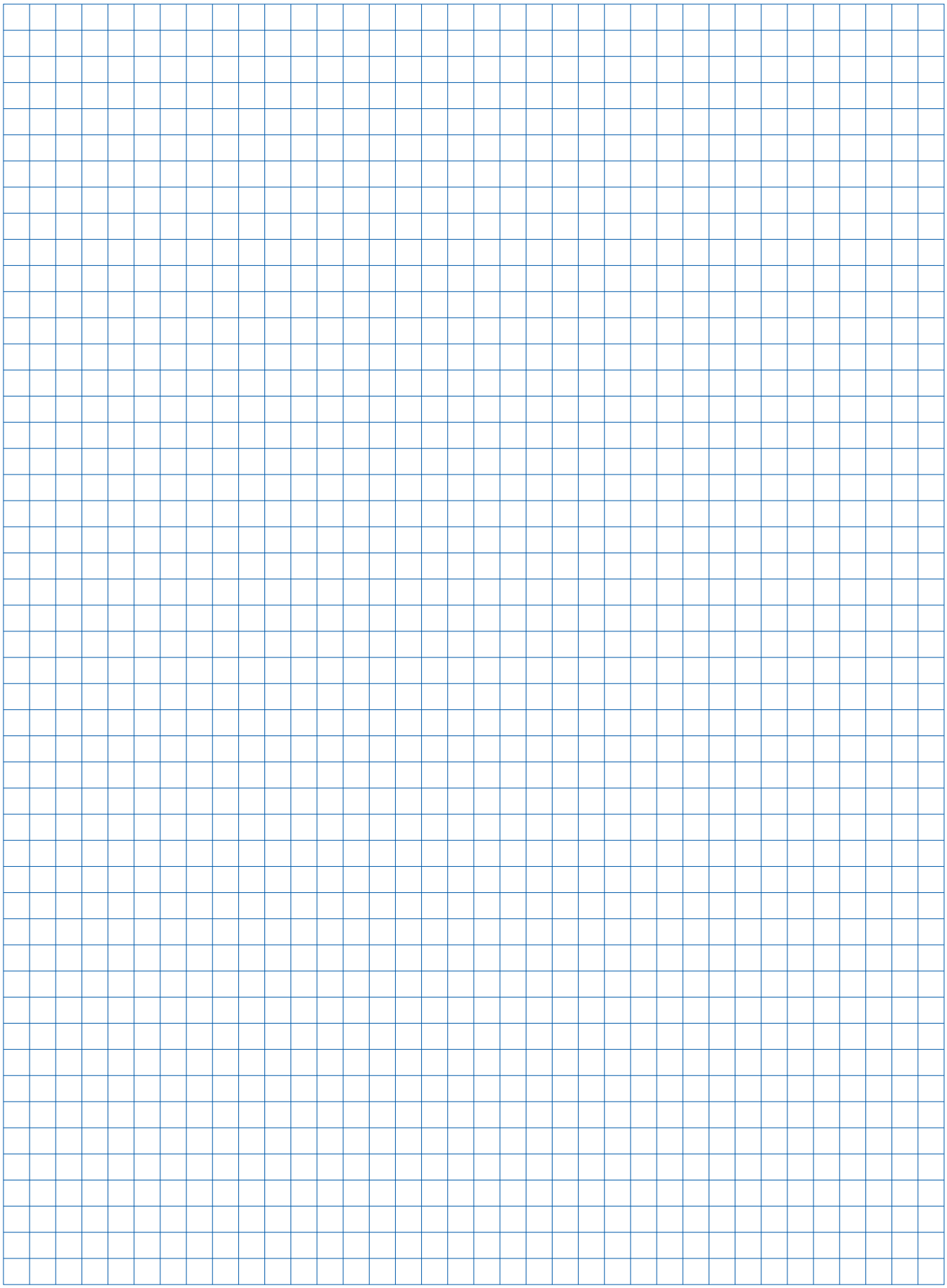
**A** She-bolt or taper tie
**B** Super-plate 20.0 B
**C** Reducer sleeve

| Conical on one side | Conical on both sides | Height mismatch |
|---|---|---|
| She-bolt: max. 5°<br><br>Taper tie (small end): max. 8°<br><br>Form-tie system 20.0: max. 8° | max. 2 x 5°<br><br>Taper tie (small end): max. 8°<br><br>Taper tie (large end): max. 5°<br><br>Form-tie system 20.0: max. 2 x 8° | max. 1" per 10" of wall thickness |
|  9727-297-01 |  9727-298-01 |  9727-296-01 |

**Note:**

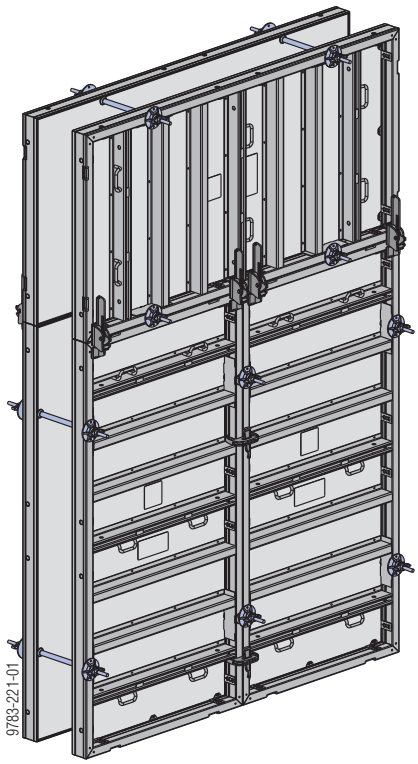
Secure inclined panels against uplift.

Inclined and height-mismatched positioning are not possible with panels that have been placed on their sides (horizontally).



# Tie-rod system using anchor-plates

## Tying the panels in the frame profile

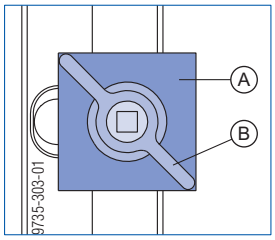



**The basic rule is:**

Place a form-tie in every form tie hole within a panel that is not covered by a tie washer (e.g. at a panel joint, only tie one of the two adjoining panels).

Always tie in the bigger (wider) of the two panels.

For exceptions, see "Length adjustment using fillers" and "Vertical stacking of panels".




**A** Anchor plate, min. 5" x 5" ( 12 x 12 cm)
**B** Wing nut

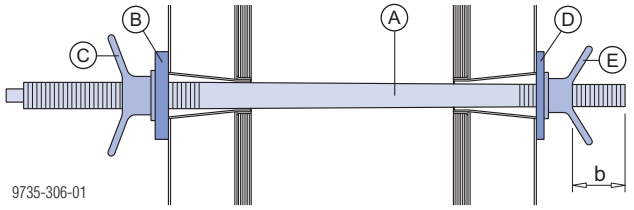
**WARNING**
Sensitive rod steel!
- ➤ Never weld or heat tie-rods.
- ➤ Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.
- ➤ Only use approved tie-rods.

Close off any unneeded form-tie sleeves with **Framax S frame hole plugs 44**.

**Note:**
Doka also offers economical solutions for creating watertight wall-ties.

For more information, see the User Information booklet "Doka form-ties for special requirements".

# Taper-tie system 1 1/2" to 1 1/4"



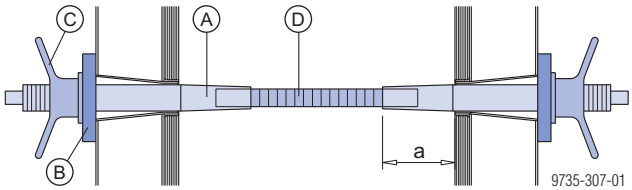

**A** Taper tie 1 1/2" to 1 1/4"
**B** Anchor plate 1 1/2"
**C** Wing nut 1 1/2"
**D** Anchor plate 1 1/4"
**E** Wing nut 1 1/4"

| Wall thickness | Taper-tie size | Dimension 'b' |
|---|---|---|
| 8 1/2" to 11 1/2" (21.6 to 29.2 cm) | 36" | 4 1/4" (10.8 cm) |
| 11 1/2" to 14 1/2" (29.2 to 36.8 cm) | | 1 1/4" (3.2 cm) |
| 14 1/2" to 17 1/2" (36.8 to 44.5 cm) | 42" | 4 1/4" (10.8 cm) |
| 17 1/2" to 20 1/2" (44.5 cm to 52.1 cm) | | 1 1/4" (3.2 cm) |
| 20 1/2" to 23 1/2" (52.1 to 59.7 cm) | 48" | 4 1/4" (10.8 cm) |
| 23 1/2" to 26 1/2" (59.7 to 67.3 cm | | 1 1/4" (3.2 cm) |
| 26 1/2" to 29 1/2" (67.3 to 75.0 cm) | 54" | 4 1/4" (10.8 cm) |
| 29 1/2" to 32 1/2" (75.0 to 82.6 cm | | 1 1/4" (3.2 cm) |
| 32 1/2" to 35 1/2" (82.6 to 90.2 cm) | 60" | 4 1/4" (10.8 cm) |
| 35 1/2" to 38 1/2" (90.2 to 97.8 cm) | | 1 1/4" (3.2 cm) |
| 38 1/2" to 41 1/2" (97.8 to 105.4 cm) | 66" | 4 1/4" (10.8 cm) |
| 41 1/2" to 44 1/2" (105.4 to 113.0 cm) | | 1 1/4" (3.2 cm) |
| 44 1/2" to 47 1/2" (113.0 to 120.7 cm) | 72" | 4 1/4" (10.8 cm) |
| 47 1/2" to 50 1/2" (120.7 to 128.3 cm) | | 1 1/4" (3.2 cm) |
| 50 1/2" to 53 1/2" (128.3 to 135.9 cm) | 78" | 4 1/4" (10.8 cm) |
| 53 1/2" to 56 1/2" (135.9 to 143.5 cm) | | 1 1/4" (3.2 cm) |

**Taper tie 1 1/2" to 1 1/4"**

Permitted capacity allowing a 2 : 1 factor of safety against failure: 50,000 lbs (222 kN)

# She-bolt system 1 1/2"




a ... 4" (10.2 cm)

**A** She-bolt 1 1/2"
**B** Anchor plate 1 1/2"
**C** Wing nut 1 1/2"
**D** Coil rod 1"

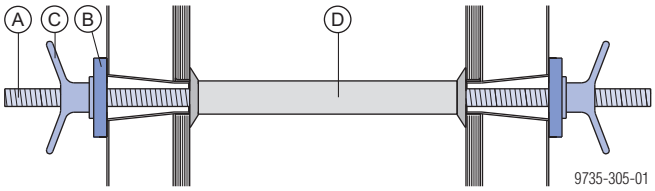
**Required length of she-bolt:**

| | She-bolt |
|---|---|
| Tie fixed directly on frame profile | 1 1/2"x**14"** |
| Tie passes through universal waling | 1 1/2"x**20"** |

**She-bolt system 1 1/2":**

Permitted capacity allowing a 2 : 1 factor of safety against failure: 37,500 lbs (166 kN)

# Coil rod system 1"



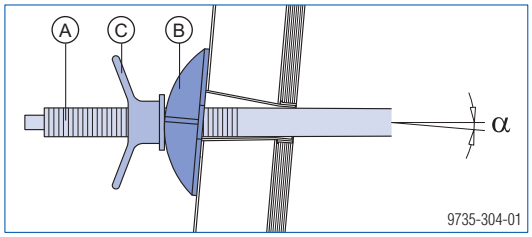

**A** Coil rod 1"
**B** Anchor plate 1"
**C** Wing nut 1"
**D** Plastic tube

**Coil rod 1"**

Permitted capacity allowing a 2 : 1 factor of safety against failure: 37,500 lbs(166 kN)

# Sloping ties on height-mismatched panels

Thanks to their large, conical form-tie sleeves, the panels can be inclined on one or both sides, and/or height-mismatched.

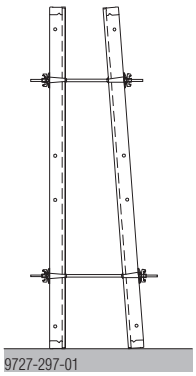
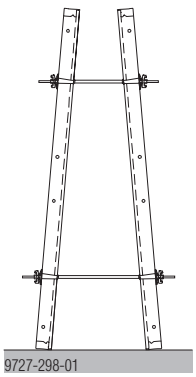
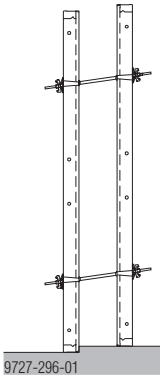



α ... max. 5° (on form-ties of diam 1 1/2")
... max. 8° (on form-ties of diam 1 1/4")

**A** She-bolt or taper tie

**B** Angle anchor plate

**C** Wing nut

| Conical on one side | Conical on both sides | Height mismatch |
|---|---|---|
| She-bolt: max. 5°<br><br>Taper tie (small end): max. 8°<br><br>Form-tie system 20.0: max. 8° | max. 2 x 5°<br><br>Taper tie (small end): max. 8°<br><br>Taper tie (large end): max. 5°<br><br>Form-tie system 20.0: max. 2 x 8° | max. 1" per 10" of wall thickness |
|  |  |  |

**Note:**

Secure inclined panels against uplift.

Inclined and height-mismatched positioning are not possible with panels that have been placed on their sides (horizontally).

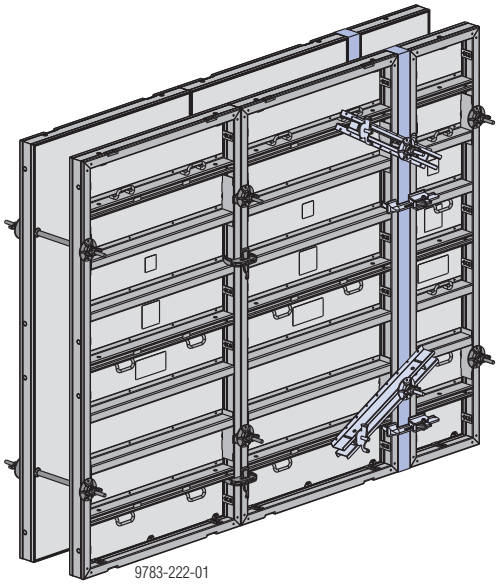
# Length adjustment using fillers

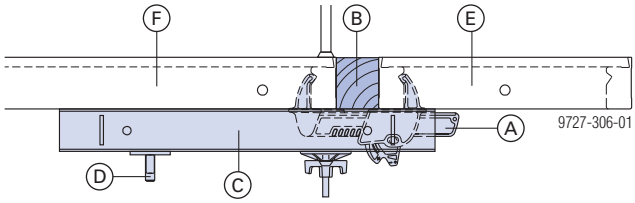
## Filler widths: 0 - 6" (0 - 15 cm)

### with fitting-timbers and Framax multi-function clamps

**Framax S universal waling:**
Permitted moment: 3.85 kip-ft (5.2 kNm)

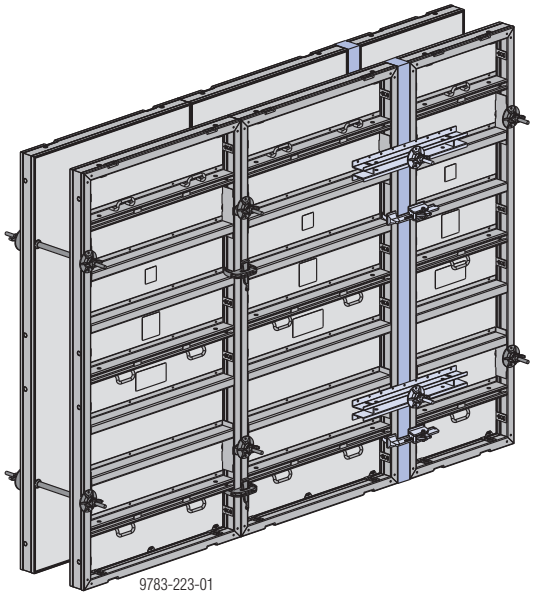
#### Tying through frame profile

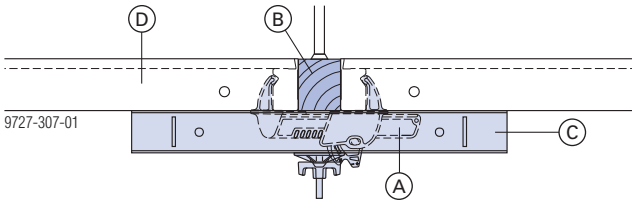



**A** Framax multi-function clamp
**B** Fitting-timber
**C** Framax S universal waling
**D** Framax wedge clamp
**E** Framax S Xlife panel (max. width 60cm)
**F** Framax S Xlife panel

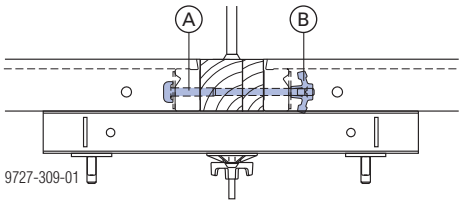
#### Tying through fitting-timber




**A** Framax multi-function clamp
**B** Fitting-timber
**C** Framax universal waling (for fillers up to 2" (5 cm) wide, no universal walings are needed)
**D** Framax S Xlife panel

### with fitting-timbers and Framax universal fixing bolts



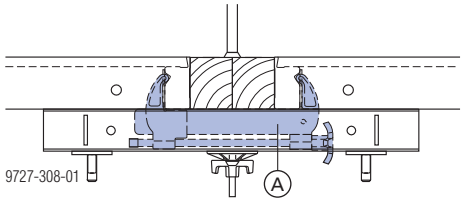

**A** Framax universal fixing bolt
**B** Star grip nut 15.0 G

3 universal fixing bolts are needed for every 2.70 m of panel height.

| | Filler range |
|---|---|
| Framax universal fixing bolt 10-16cm | 0" to 2 3/8" (0 to 6 cm) |
| Framax universal fixing bolt 10-25cm | 0" to 6" (0 to 15 cm) |

# Filler widths: 0 - 8" (0 - 20 cm)

## with fitting-timbers and Framax adjustable clamps

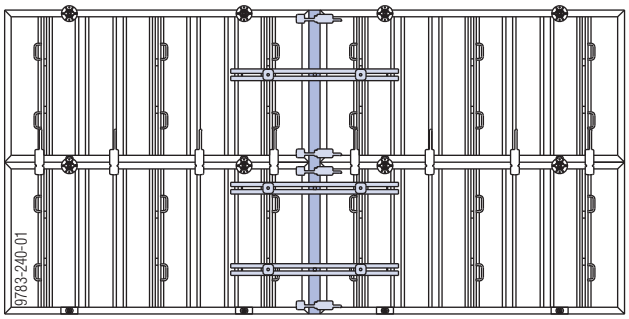



**A** Framax adjustable clamp

Fit the Framax adjustable clamp in the same position as the Framax multi-function clamp.

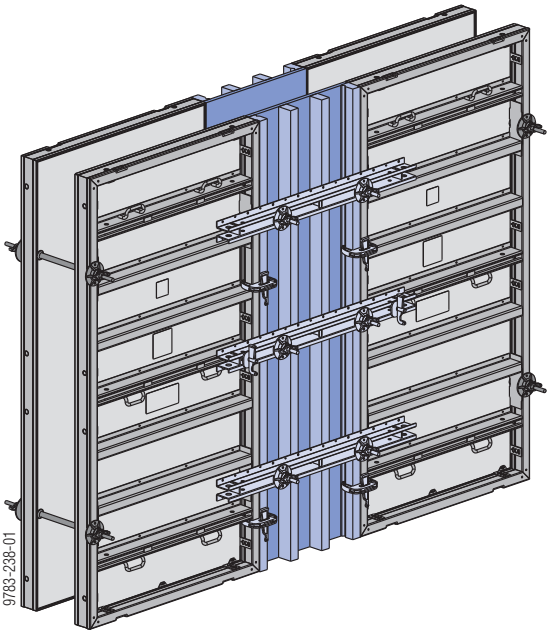
**Framax adjustable clamp:**
Permitted tensile force: 2.25 kip (10.0 kN)

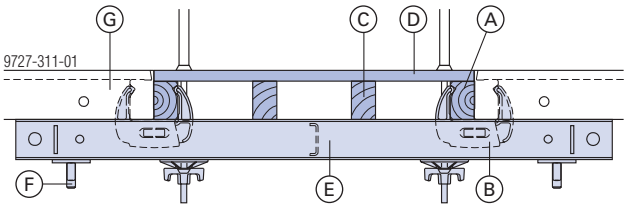
# Fillers on horizontal panels




# Filler widths: 7" - 30" (17 - 80 cm)

## with molded timbers and formwork sheeting




**A** Framax molded timber
**B** Framax quick-acting clamp RU
**C** Dimensional lumber
**D** Formwork sheet
**E** Framax S universal waling
**F** Framax wedge clamp
**G** Framax S Xlife panel

| | Filler range |
|---|---|
| Framax S universal waling 0.90m | 0" to 12" (0 to 30 cm) |
| Framax S universal waling 1.50m | 0" to 30" (0 to 80 cm) |

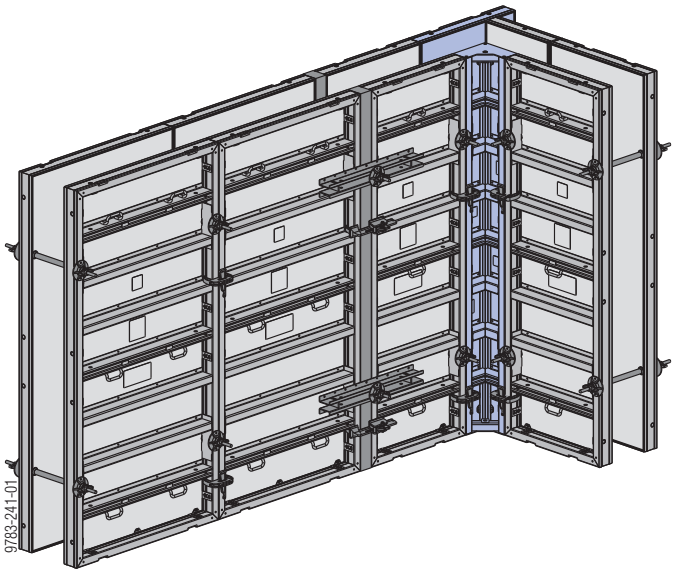
**Tying the panels:**

Filler widths <12" (30 cm): Place 1 tie through the filler in the top universal waling, and 1 in the bottom universal waling.

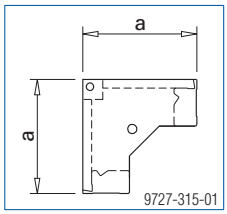
Filler widths >12" (30 cm): Place two ties in each of the 3 universal walings (per 2.70 m formwork height.

A tension anchor can be made using a tie-rod and Star grip nut 15.0 G.

# 90 degree corners




The corner solutions are based on the strong, torsion-proof **Framax Xlife inside corner**.




a ... 12" (30.5 cm)
The hole drilled in the inside corner enables a vertical stacking connection to be made using universal fixing bolts + super-plates.

There are **2 ways** of forming right-angled **outside corners**:

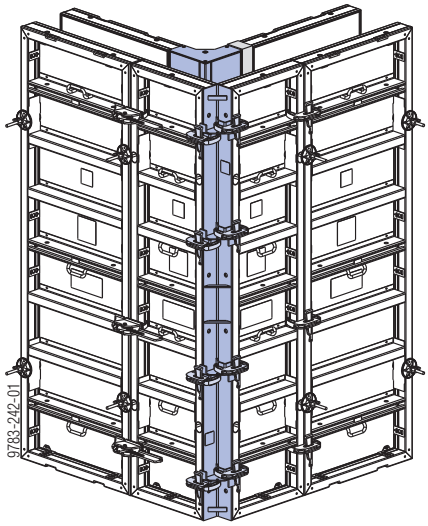
- with Framax Xlife universal panels
- with Framax outside corners

For details regarding extra clamps on outside corners (for increased tensile loads) see "Inter-panel connections for increased tensile loads".

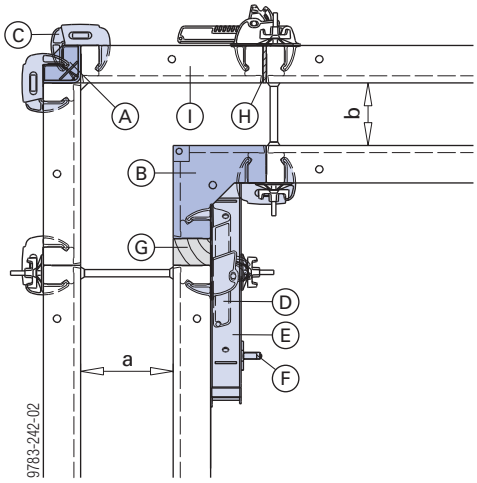
Do not oil or grease wedge-clamped joints.

## with Framax outside corners

The Framax outside corner is used in e.g. narrow trench situations.




### Wall thicknesses up to 12" (30.5 cm)

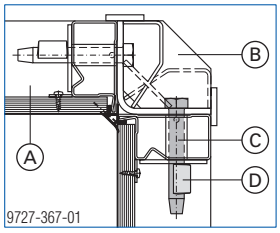



a ... 12" (30.5 cm)
b ... 8" (20.3 cm)

| | |
|---|---|
| **A** | Framax outside corner |
| **B** | Framax S Xlife inside corner |
| **C** | Framax quick-acting clamp RU |
| **D** | Framax multi-function clamp |
| **E** | Framax S universal waling |
| **F** | Framax wedge clamp |
| **G** | Fitting-timber 3 $^1/_2$" (9 cm) |
| **H** | Fitting-timber $^1/_2$" (1.3 cm) |
| **I** | Framax S Xlife panel 0.60m |

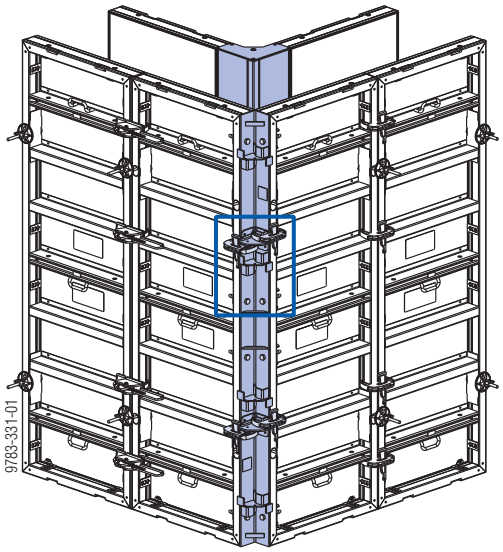
Where there is a **filler on both sides** of the inside corner, the **universal corner waling** is an economical way of providing stiffening reinforcement.

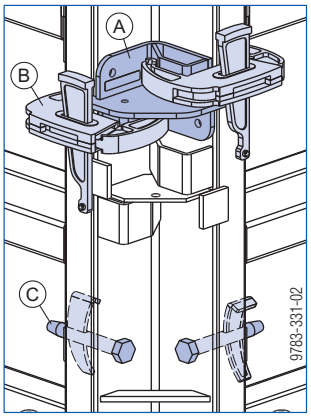
## Wall thicknesses > 12" (30.5 cm) and up to 24" (60 cm)




**A** Framax S Xlife panel
**B** Framax outside corner
**C** Framax wedge bolt RA 7.5
**D** Framax tensioning wedge R

## Wall thicknesses > 24" (60 cm) and up to 41" (104.5 cm)




**A** Framax S corner clamp
**B** Framax quick-acting clamp RU
**C** Framax wedge bolt RA 7.5 + Framax tensioning wedge R

### Required number of connectors for different wall thicknesses

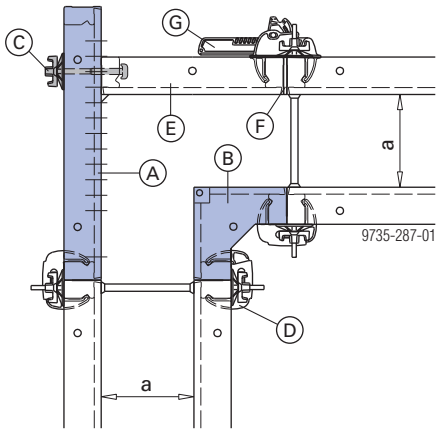
| Wall thickness | Height of outside corner | Quick-acting clamps RU | Tensioning wedges | Wedge bolts | Corner clamps |
|---|---|---|---|---|---|
| Up to 12" (30.5 cm) | 1.35 m | 4 | | | |
| | 2.70m | 8 | | | |
| >12" (30.5 cm) and up to 24" (60 cm) | 1.35 m | | 4 | 4 | |
| | 2.70m | | 8 | 8 | |
| >24" (60 cm) and up to 41" (104.5 cm) | 1.35 m | 2 | 4 | 4 | 1 |
| | 2.70m | 4 | 8 | 8 | 2 |

## with Framax Xlife universal panels

The continuous 2" (5.1 cm) hole-grid makes it possible to form corner configurations on walls of up to 30" (76.2 cm) thick.

### Attainable wall thicknesses in a 2" (5.1 cm) grid:

| | |
|---|---|
| Framax S Xlife universal panel 0.90m | 2" to 16" (5.1 to 40.6 cm) |
| Framax S Xlife universal panel 1.22m | 2" to 30" (5.1 to 76.2 cm) |




a ... 12" (30.5 cm)

| | |
|---|---|
| **A** | Framax S Xlife universal panel |
| **B** | Framax S Xlife inside corner |
| **C** | Framax universal fixing bolt + Super-plate 15.0 |
| **D** | Framax quick-acting clamp RU |
| **E** | Framax S Xlife panel 0.60m |
| **F** | Fitting-timber $^{3}/_{8}$" (1 cm) |
| **G** | Framax multi-function clamp |

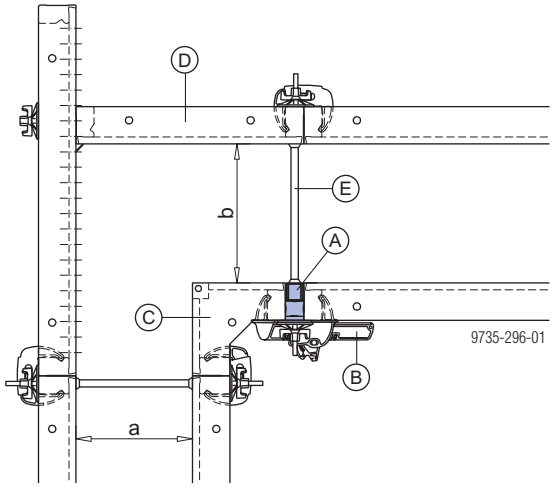
### Required numbers of Universal fixing bolts + Super-plates 15.0:

| | |
|---|---|
| Universal panel 0.90m | 2 of each |
| Universal panel 1.35m | 2 of each |
| Universal panel 2.70m | 4 of each |

## Framax steel filler 6cm

Used mainly in corner zones, the Framax steel filler 6cm stands out for its high strength and long lifespan.

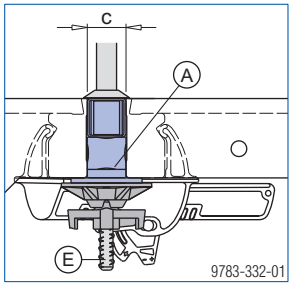
| | |
|---|---|
| Steel filler - **inside** | e.g. wall thickness<br>15" (38.5 cm) and 21" (53.5 cm) |
| Steel filler - **outside** | e.g. wall thickness<br>20" (50.5 cm) and 26" (65.5 cm) |




a ... 15" (38.5 cm)
b ... 18" (46 cm)

Always locate ties in the steel filler.

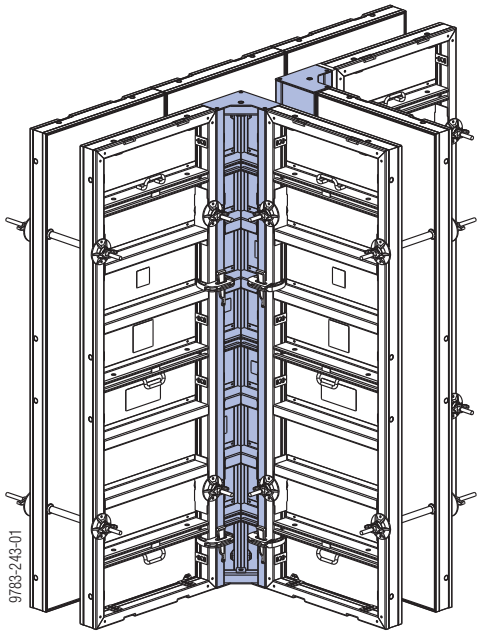
When steel fillers are used, no universal walings are needed.

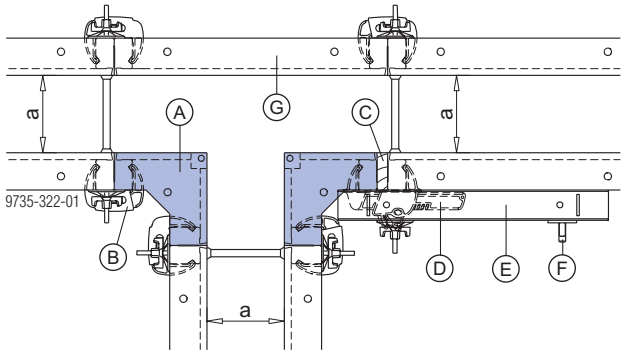



c ... 2 $^{1}/_{2}$" (6.0 cm)

| | |
|---|---|
| **A** | Framax S steel filler 6cm |
| **B** | Framax multi-function clamp |
| **C** | Framax S Xlife inside corner |
| **D** | Framax S Xlife panel 0.75m |
| **E** | Form-tie |

# Example: T-junction



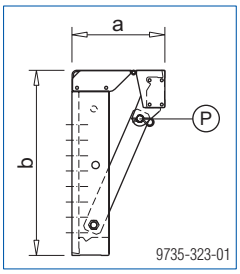




a ... 10" (25.4 cm)

| | |
|---|---|
| **A** | Framax S Xlife inside corner |
| **B** | Framax quick-acting clamp RU |
| **C** | Fitting-timber 1 $^1/_2$" (3.7 cm) |
| **D** | Framax multi-function clamp |
| **E** | Framax S universal waling |
| **F** | Framax wedge clamp |
| **G** | Framax S Xlife panel 0.90m |

# Pilasters

Pilasters can be formed quickly using pilaster panels.




a ... 12" (30.5 cm)
b ... 24" (61 cm)

**P** Fastening bolt for fixing at right-angles (during pouring)

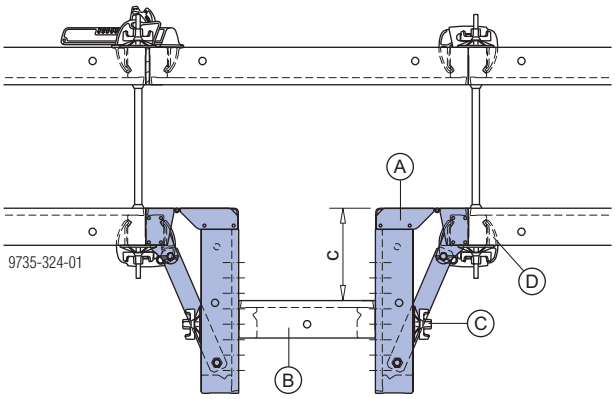
The pilaster panel permits pilaster depths of 4" (10 cm) to 18" (46 cm), in 2" (5.1 cm) increments, and of 24" (61 cm) when outside corners are used.

### Required number of connectors per pilaster:

| Panel height | Framax universal fixing bolt + Super-plates 15.0 |
|---|---|
| 1.35m | 4 |
| 2.70m | 8 |

### 2 positions / functions:

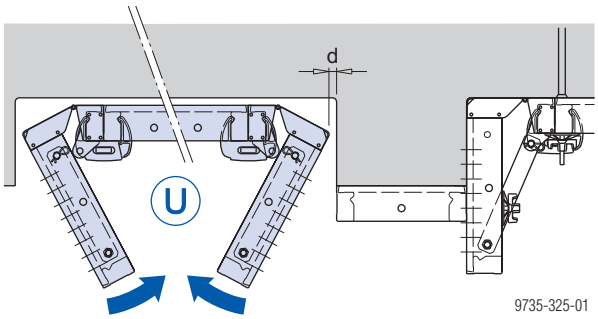
- bolted in place at right-angles –> for pouring




c ... 4" to 18" (10 to 46 cm)

**A** Framax S Xlife pilaster panel
**B** Framax S Xlife panel
**C** Framax universal fixing bolt + Super-plate 15.0
**D** Framax quick-acting clamp RU

- folded closed –> for stripping and resetting the formwork



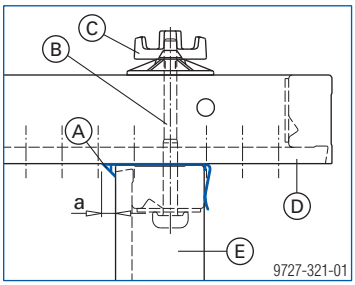

d ... stripping play 1" (2.5 cm)

**U** Lift-in-one unit

# Chamfer edges

## with Framax frontal triangular ledge

The Framax frontal triangular ledge can be pushed over the end face of the panel (no nails needed). For forming outside corners, it is used with the universal panel (integrated slot grid for universal fixing bolts). It is also possible to form edges using the Framax triangular ledge, of course.

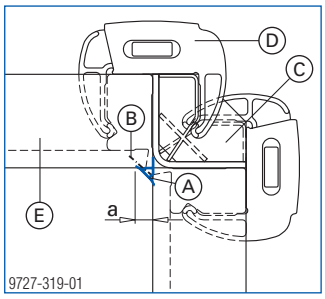



a ... 3/4" (20 mm)

| | |
|---|---|
| **A** | Framax frontal triangular ledge 2.70m or Framax triangular ledge 2.70m |
| **B** | Framax universal fixing bolt |
| **C** | Super-plate 15.0 |
| **D** | Framax S Xlife universal panel |
| **E** | Framax S Xlife panel |

## with the Framax triangular ledge

Where outside corners are formed using the Framax outside corner, the quick acting clamps used for the interconnection mean that the Framax triangular ledge has to be used here.




a ... 3/4" (20 mm)

| | |
|---|---|
| **A** | Framax triangular ledge 2.70m |
| **B** | Wire nail 22x40 |
| **C** | Framax outside corner |
| **D** | Framax quick-acting clamp RU |
| **E** | Framax S Xlife panel |

# Inter-panel connections for increased tensile loads

As a basic rule, only **2 clamps are needed per 2.70 m formwork height** as a tension link between the panels.
However, where **increased tensile loads** need to be sustained, especially near outside corners and bulk-heads, **extra clamps are needed**.

**Wall thicknesses up to 16" (40 cm):**

For each panel joint located up to 4'-6" (135 cm) away from an outside corner or wall-end:

- 1 extra clamp

**Wall thicknesses up to 24" (60 cm):**

For each panel joint located up to 4'-6" (135 cm) away from an outside corner or wall-end:

- 2 extra clamps

For each panel joint between 4'-6" (135 cm) and 9' (270 cm) from an outside corner or wall-end:

- 1 extra clamp

**Wall thicknesses up to 36" (91.5 cm):**

For each panel joint located up to 4'-6" (135 cm) away from an outside corner or wall-end:

- 3 extra clamps

For each panel joint between 4'-6" (135 cm) and 9' (270 cm) from an outside corner or wall-end:

- 2 extra clamps

For each panel joint between 9' (270 cm) and 13'-4" (405 cm) from an outside corner or wall-end:

- 1 extra clamp

**Wall thicknesses up to 41" (104.5 cm):**

For each panel joint located up to 4'-6" (135 cm) away from an outside corner or wall-end:

- 4 extra clamps

For each panel joint between 4'-6" (135 cm) and 9' (270 cm) from an outside corner or wall-end:

- 3 extra clamps

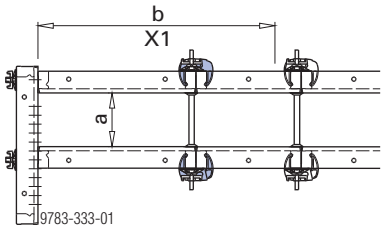
For each panel joint between 9' (270 cm) and 13'-4" (405 cm) from an outside corner or wall-end:

- 2 extra clamps

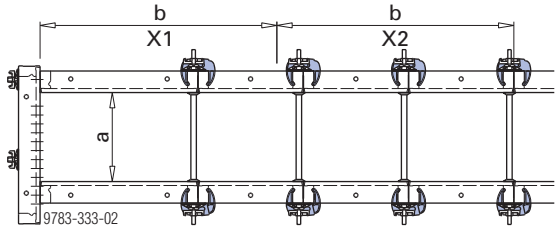
For each panel joint between 13'-4" (405 cm) and 17'-9" (540 cm) from an outside corner or wall-end:

- 1 extra clamp

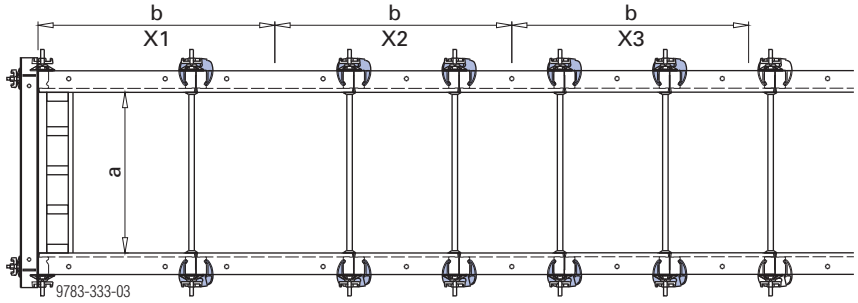
# Near bulkheads



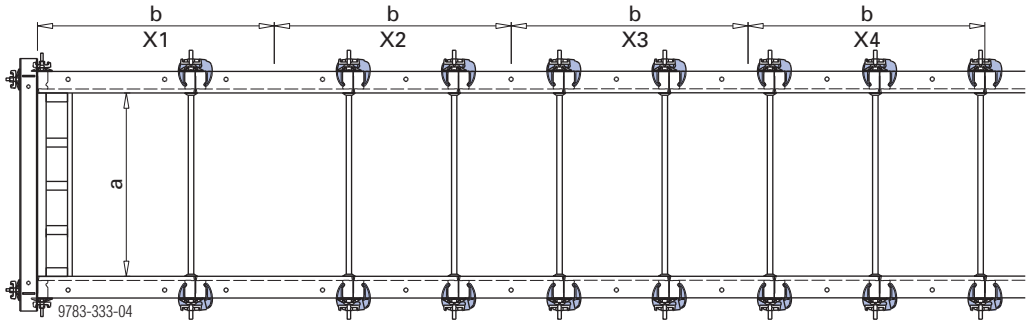

a ... up to 16" (40 cm)
b ... 4'-6" (135 cm)
**X1** ... **1 extra clamp**




a ... up to 24" (60 cm)
b ... 4'-6" (135 cm)
**X1** ... **2 extra clamps**
**X2** ... **1 extra clamp**

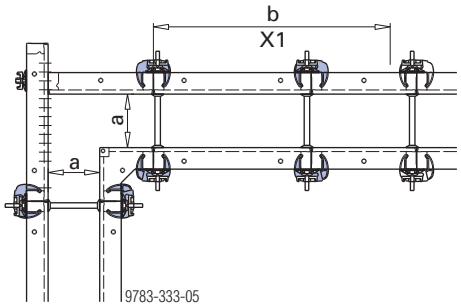



a ... up to 36" (91.5 cm)
b ... 4'-6" (135 cm)
**X1** ... **3 extra clamps**
**X2** ... **2 extra clamps**
**X3** ... **1 extra clamp**

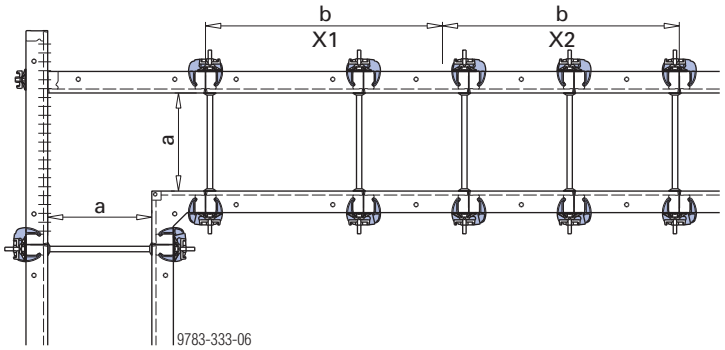



a ... up to 41" (104.5 cm)
b ... 4'-6" (135 cm)
**X1** ... **4 extra clamps**
**X2** ... **3 extra clamps**
**X3** ... **2 extra clamps**
**X4** ... **1 extra clamp**

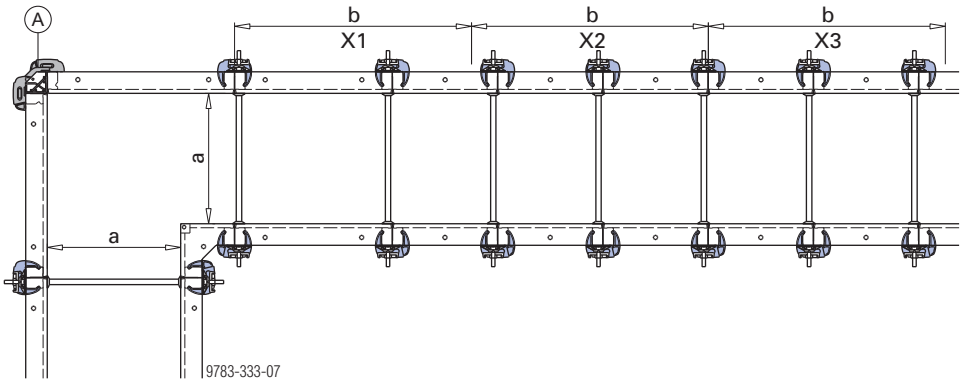
# Near outside corners




a ... up to 16" (40 cm)
b ... 4'-6" (135 cm)
**X1** ... **1 extra clamp**

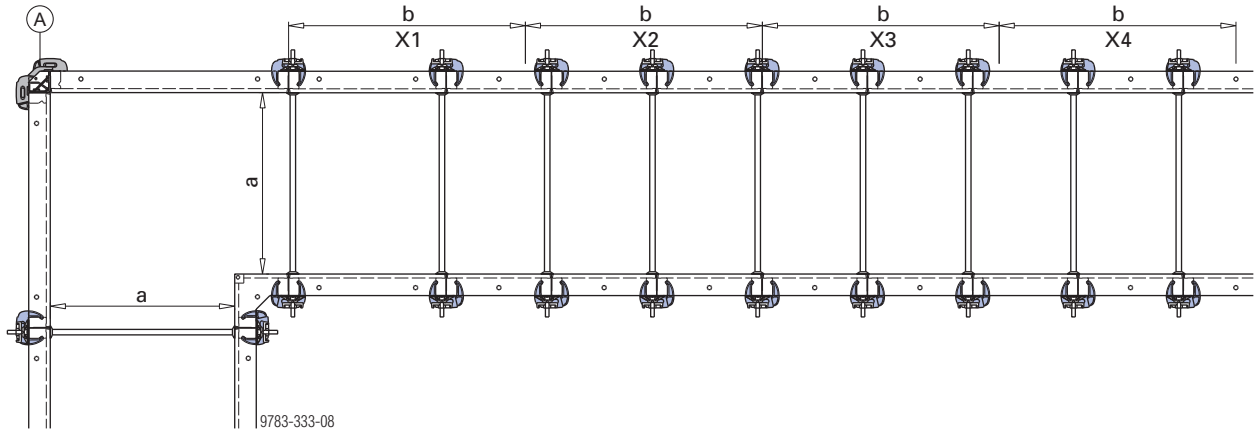



a ... up to 24" (60 cm)
b ... 4'-6" (135 cm)
**X1** ... **2 extra clamps**
**X2** ... **1 extra clamp**




a ... up to 36" (91.5 cm)
b ... 4'-6" (135 cm)
**X1** ... **3 extra clamps**
**X2** ... **2 extra clamps**
**X3** ... **1 extra clamp**

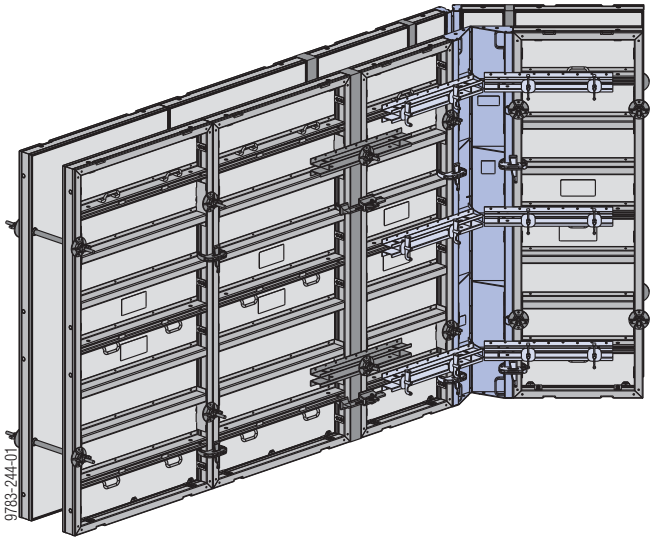
**A** Framax S corner clamp +
Framax quick-acting clamp RU +
Framax wedge bolt RA 7.5 +
Framax tensioning wedge R



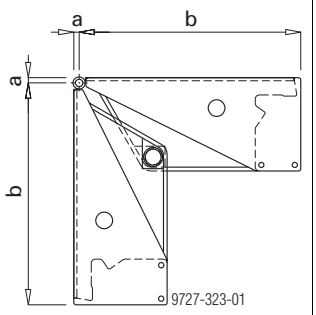
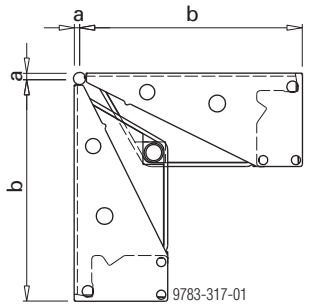

a ... up to 41" (104.5 cm)
b ... 4'-6" (135 cm)
**X1** ... **4 extra clamps**
**X2** ... **3 extra clamps**
**X3** ... **2 extra clamps**
**X4** ... **1 extra clamp**

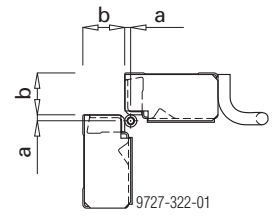
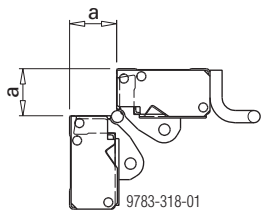
| | |
|---|---|
| **A** | Framax S corner clamp +<br>Framax quick-acting clamp RU +<br>Framax wedge bolt RA 7.5 +<br>Framax tensioning wedge R |

# Acute and obtuse-angled corners




Acute and obtuse angles are formed using the hinged inside and outside corners.

| Hinged inside corner I | Hinged inside corner I |
|---|---|
|   |   |
| a ... 1/4" (0.7 cm)<br>b ... 11 1/2" (29.2 cm) | a ... 1/4" (0.7 cm)<br>b ... 11 1/2" (29.3 cm) |

| Hinged outside corner A (powder-coated) | Hinged outside corner A (galvanized) |
|---|---|
|   |   |
| a ... 3/8" (0.8 cm)<br>b ... 2 1/8" (5.5 cm) | a ... 2 1/2" (0.63 cm) |

**Note:**

The Framex S hinged outside corner A (galvanized) cannot be combined with the Framax S hinged outside corner A (powder-coated).

**N° of universal walings in the outside and inside corners:**

| Panel height | N° of universal walings |
|---|---|
| 1.35 m | 4 |
| 2.70 m | 6 |

Position of the universal walings:
In every support level of the Hinged inside corner I.

**Note:**

For angles of less than 120°, no universal walings are needed in inside corners.

**Important note:**

If there are fillers, fit extra Universal walings as shown in "Length adjustment using fillers".

**Number of clamps needed in the hinged outside corner:**

| Panel height | N° of clamps |
|---|---|
| 1.35 m | 4 |
| 2.70 m | 8 |

**Important note:**

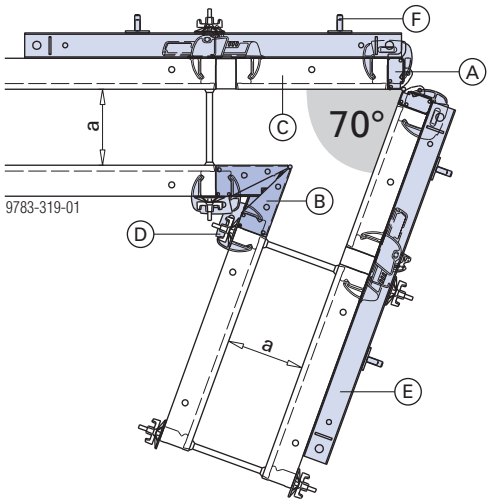
For details regarding extra clamps on outside corners (for increased tensile loads) see "Inter-panel connections for increased tensile loads".

# 70° – 135° angles, with Hinged corners I + A

**Important note:**

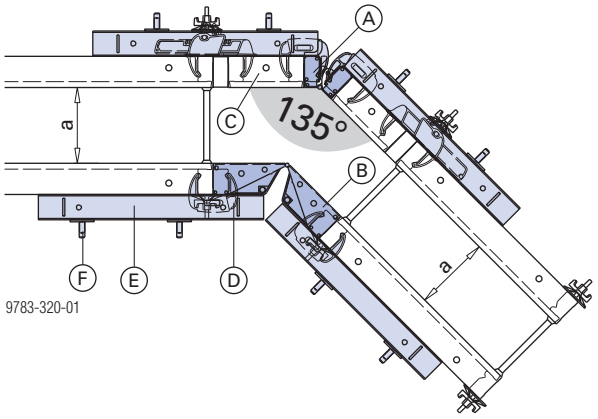
- **Max. width of panel** next to Hinged corner A: **0.60m**
- In addition, **fillers of up to 6" (15 cm)** are allowed.

The use of panels wider than 0.60 m next to hinged corners must be reviewed by our Engineering Office to determine proper and safe usage.




a ... 12" (30.5 cm)

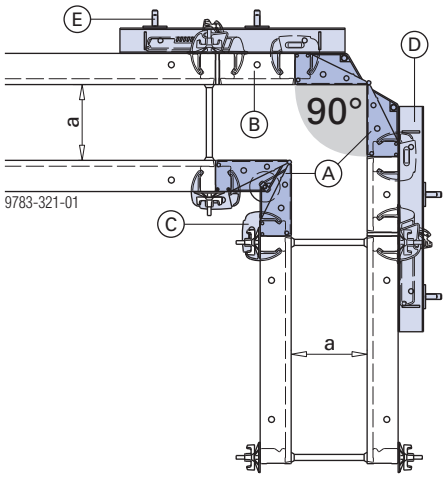
| | |
|---|---|
| **A** | Framax hinged outside corner A |
| **B** | Framax S hinged inside corner I |
| **C** | Framax S Xlife panel 0.60m |
| **D** | Framax quick-acting clamp RU |
| **E** | Framax S universal waling 1.50m |
| **F** | Framax wedge clamp |




a ... 12" (30.5 cm)

| | |
|---|---|
| **A** | Framax hinged outside corner A |
| **B** | Framax S hinged inside corner I |
| **C** | Framax S Xlife panel 0.30m |
| **D** | Framax quick-acting clamp RU |
| **E** | Framax S universal waling |
| **F** | Framax wedge clamp |

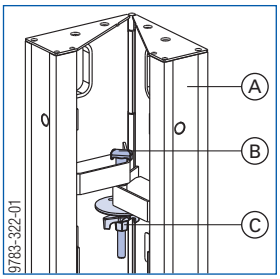
## 90° - 180° angles, with hinged inside corner I only



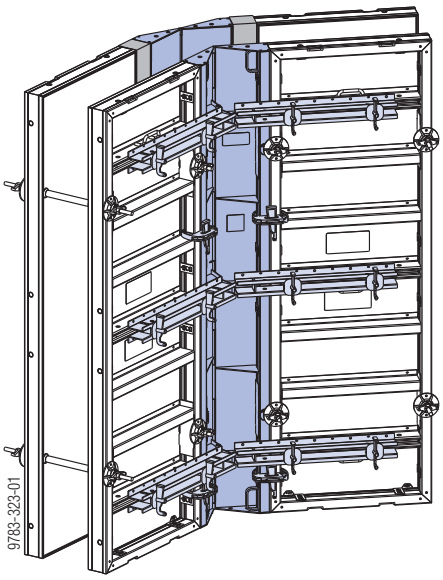

a ... 12" (30.5 cm)

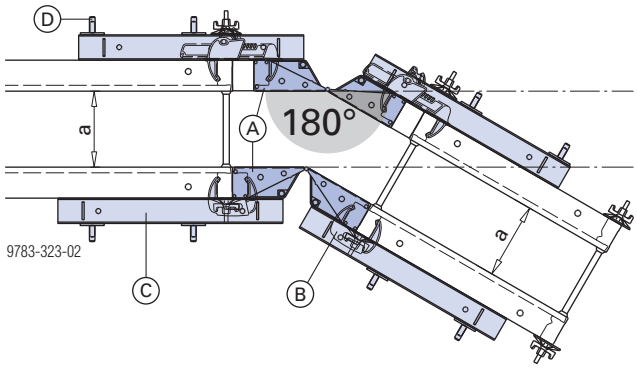
| | |
|---|---|
| **A** | Framax S hinged inside corner I |
| **B** | Framax S Xlife panel 0.30m |
| **C** | Framax quick-acting clamp RU |
| **D** | Framax S universal waling |
| **E** | Framax wedge clamp |

The Hinged inside corner I can be fixed at a 90° angle using a Universal fixing bolt and a Super-plate 15.0.



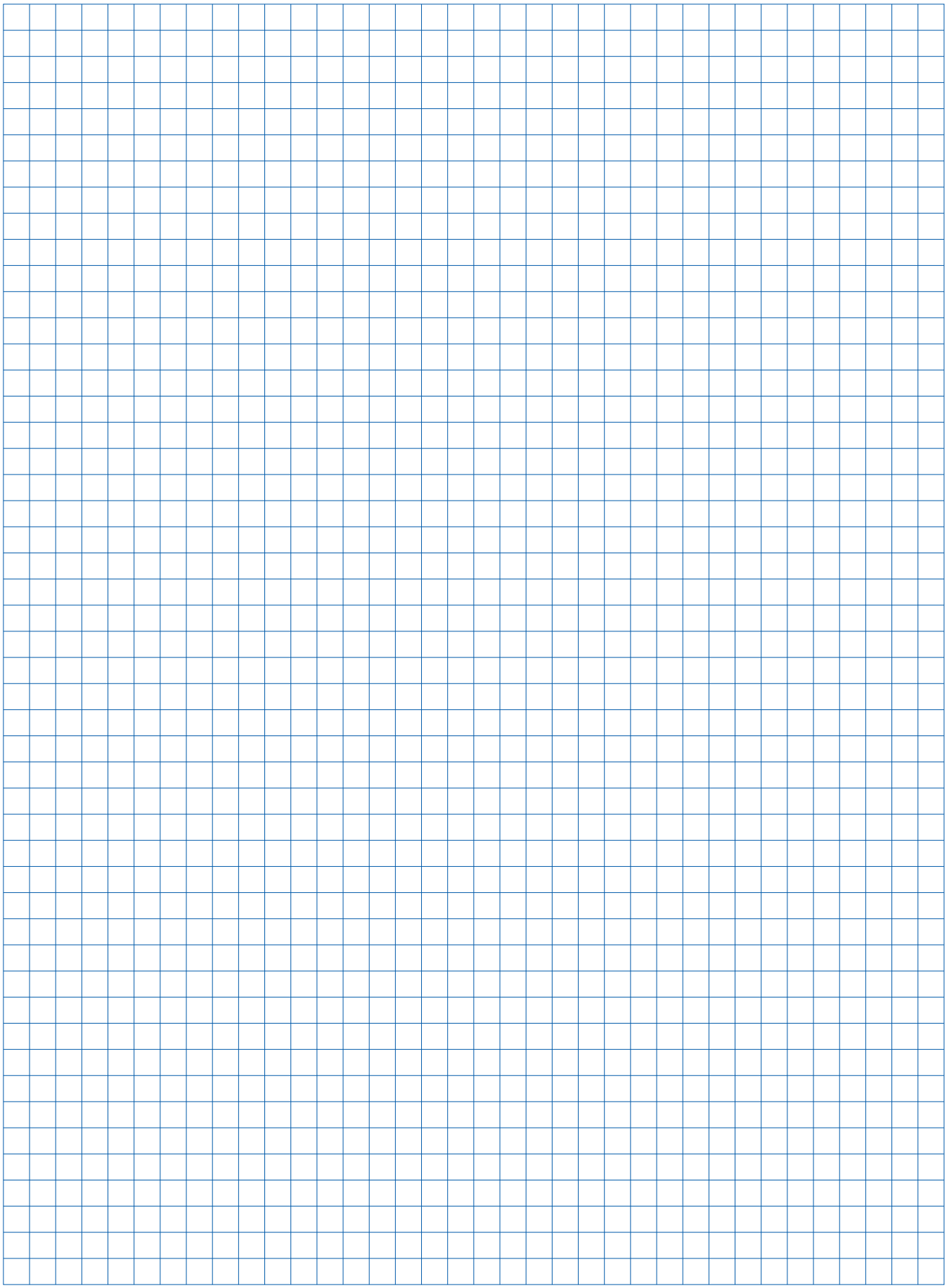

| | |
|---|---|
| **A** | Framax S hinged inside corner I |
| **B** | Framax universal fixing bolt |
| **C** | Super-plate 15.0 |




a ... 12" (30.5 cm)

| | |
|---|---|
| **A** | Framax S hinged inside corner I |
| **B** | Framax quick-acting clamp RU |
| **C** | Framax S universal waling |
| **D** | Framax wedge clamp |



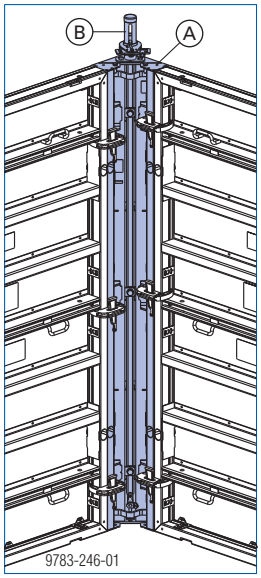
# Shaft formwork / stripping aid

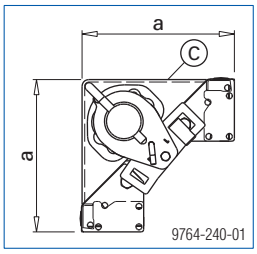
## Shaft formwork with Bias-cut corner I

With the **Bias-cut corner I**, the entire shaft formwork unit is detached from the wall, in one piece, before being lifted and reset by crane.

Product features:

- No negative impression in the concrete.
- Formwork set-up and stripping function integrated in the inside corner (no need for crane – uses stripping spindles).
- Entire shaft formwork unit is lifted and reset in one piece (with lifting hooks and four-part lifting chain).




a ... 12" (30 cm)

| | |
|---|---|
| **A** | Framax S bias cut corner I |
| **B** | Framax stripping spindle I with ratchet |
| **C** | Steel form-facing |

### Number of Framax quick-acting clamps RU needed:

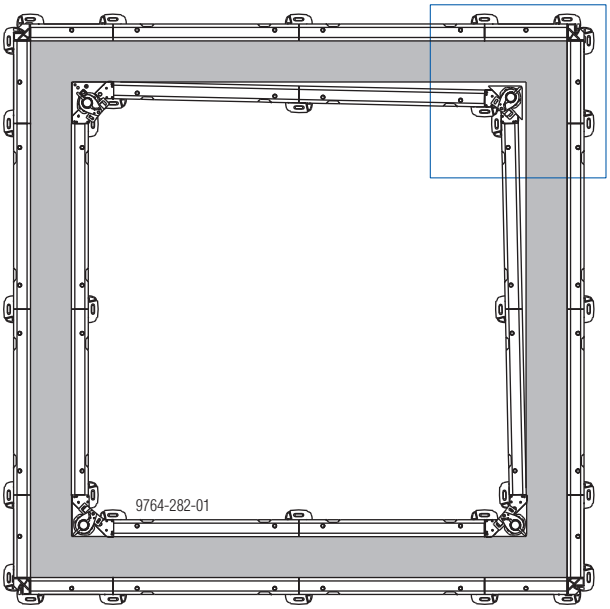
| Height of the Bias cut corner I | N° of clamps |
|---|---|
| 1.35 m | 4 |
| 2.70 m | 6 |

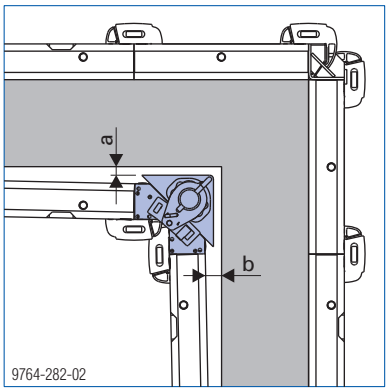
In order to obtain the full available stripping-play, make sure that the Framax quick-acting clamps RU are mounted at staggered heights (i.e. not opposite one another).

**Position of fillers** (fitting-timbers) in the inside shaft formwork:

- whenever possible, not directly next to the bias-cut corners

### Stripping play:

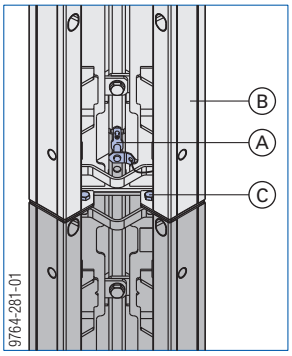



a ... 1 $^{1}/_{8}$" (30 mm)
b ... 2 $^{1}/_{4}$" (60 mm)

## Vertical stacking of Framax bias-cut corners I

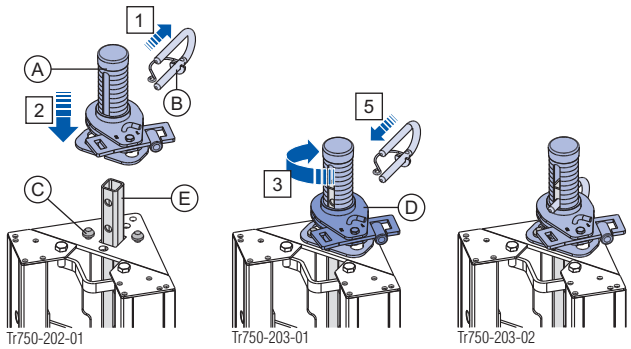
1) Pull out the coupling bolt.
2) Maneuver the Bias-cut corner I into place so that it is flush with the one below it.
3) Push the coupling bolt back in.
4) Bolt the Bias cut corners I together with two hexagonal bolts.




| | |
|---|---|
| **A** | Coupling bolt |
| **B** | Bias-cut corner I |
| **C** | Hexagonal bolt M16x45 (or $^5/_8$ x 1 $^3/_4$") |

## Mounting the Framax stripping spindle I

1) Pull out the U-bolt from the stripping spindle.
2) Place the stripping spindle on the centering stud of the bias-cut corner.
3) Twist the stripping spindle clockwise until fully engaged.
4) Position the ratchet between the holes in the push-rod.
5) Fix the stripping spindle with the U-bolt.



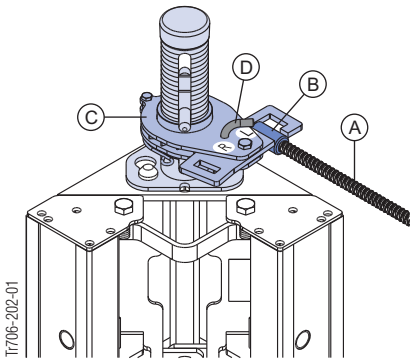

| | |
|---|---|
| **A** | Framax stripping spindle I with ratchet |
| **B** | U-bolt |
| **C** | Centering stud of bias-cut corner |
| **D** | Ratchet |
| **E** | Push-rod |

## Operating the Framax stripping spindle I with ratchet

➤ Screw a Tie-rod 15.0mm into the Weldable coupler 15.0 of the ratchet.

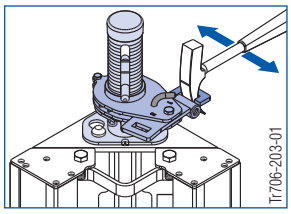
➤ **Setting up**:
- shift the change-over lever into the "**L**" position
- turn the ratchet **clockwise**.

➤ **Stripping**:
- shift the change-over lever into the "**R**" position
- turn the ratchet **anti-clockwise**.



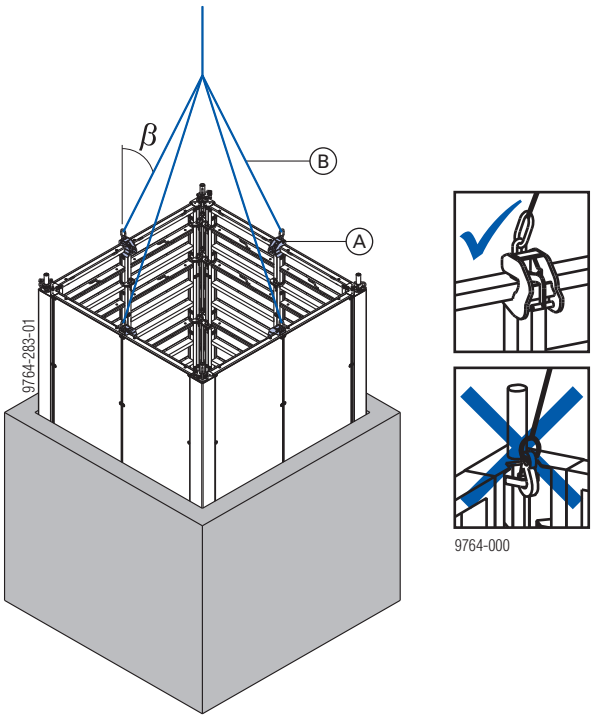

| | |
|---|---|
| **A** | Tie-rod 15.0mm |
| **B** | Weldable coupler 15.0 |
| **C** | Ratchet |
| **D** | Change-over lever |

You can also use a **formwork hammer** to operate the ratchet, instead of a Tie-rod 15.0mm.



## Resetting by crane

### Resetting the formwork




β ... max. 15°

**A** Framax lifting hook

**B** Four-part lifting chain (e.g. Doka 4-part chain 3.20m)

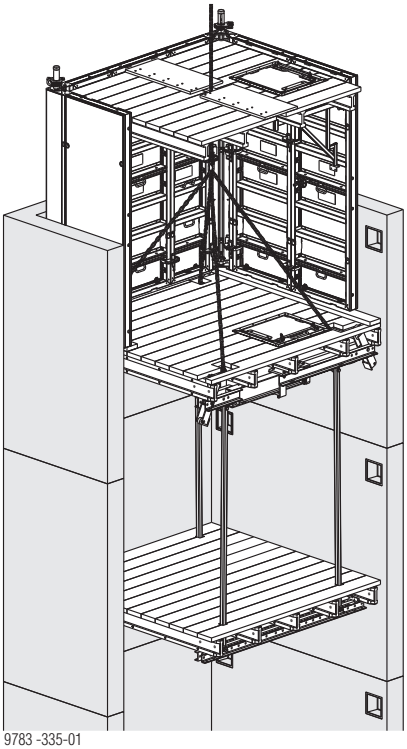
The crane hook on the Bias-cut corner I is not allowed to be used for lifting the shaft formwork.

➤ The shaft formwork may **only be reset using lifting hooks**.

**Permitted weight of the shaft formwork:**
8,800 lbs (4,000 kg) with 4 Framax lifting hooks

In case of large gangs use a lifting beam.

### Resetting the formwork plus shaft platform



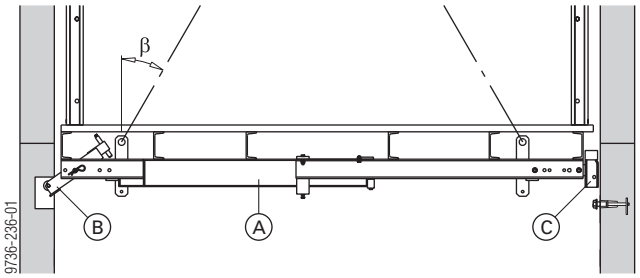

**Important note:**

- **Before lifting:** Remove any loose items from the formwork and platforms, or secure them firmly.
- 'Passenger transportation' is forbidden!
- Spread-angle β: max. 30°

**Max. load per chain-attachment point:**
4400 lbs (2000 kg)

➤ Strip out the formwork.

➤ Attach a 4-part chain to the telescopic shaft beams.




**A** Telescopic shaft beam

**B** Pawl-type mounting

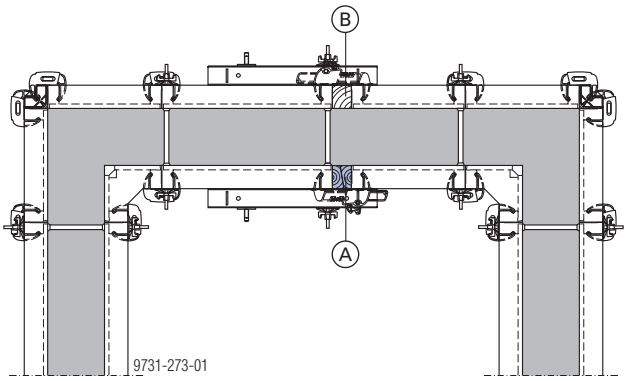
**C** With main beam head (cone-type mounting)

➤ Reposition the entire unit by crane.

Follow the directions in the "Doka shaft platform" User Information booklet.

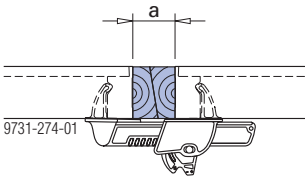
# Facilitating stripping with the formwork stripping timber (without Framax bias cut corner)

The diagonally cut formwork stripping timber makes quick work of removing inside-formwork in narrow cross-sections such as lift-shafts or stair-wells.

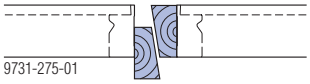



**A** **Inside** - formwork stripping timber

**B** **Outside** - fitting-timber




a ... 4" (10 cm)




The Framax formwork stripping timbers are 2.85 m long. This means that they are 15 cm longer than the panels are high, which makes them easier to remove.

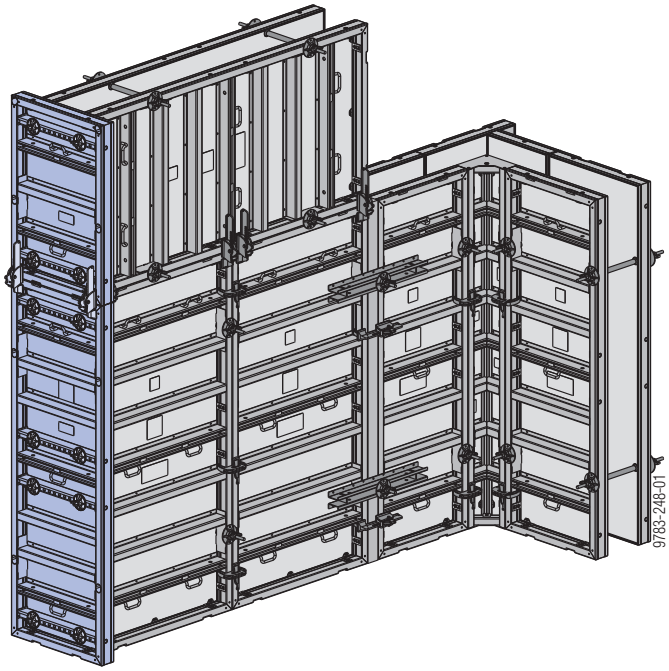
# Bulkhead formwork

There are **3 possible ways** of forming **bulkheads**:

- with Universal panels
- with stop-end waler ties
- with Universal walings

For details regarding extra clamps on bulkheads (for increased tensile loads) see "Inter-panel connections for increased tensile loads".

## with Universal panels




The Universal panels are mounted using Universal fixing bolts and Super-plates 15.0.

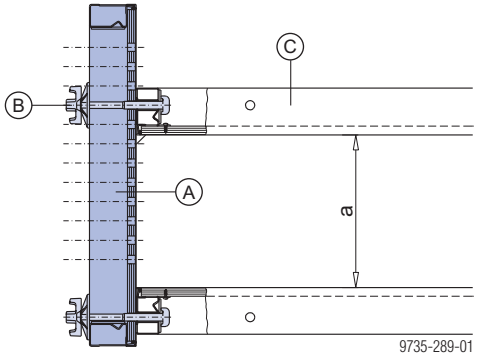
**Required number of connectors:**

| Panel height | Framax universal fixing bolts + Super-plates 15.0 |
|---|---|
| 0.90m | 4 |
| 1.35m | 4 |
| 2.70m | 8 |

**Framax universal fixing bolt:**
Permitted shear force: 8.0 kip (35.5 kN)

### Framax Xlife universal panel 0.90m

The continuous **2" (5.1 cm) hole-grid** makes it possible to form bulkheads on walls of **up to 22" (56 cm) thick**.



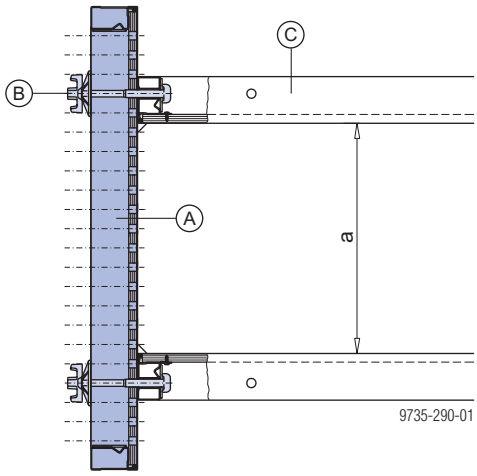

a ... up to 22" (56 cm), in 2" (5.1 cm) increments

| | |
|---|---|
| **A** | Framax S Xlife universal panel 0.90m |
| **B** | Framax universal fixing bolt + Super-plate 15.0 |
| **C** | Framax S Xlife panel (panel width > 0.30m) |

### Framax Xlife universal panel 1.22m

The continuous **2" (5.1 cm) hole-grid** makes it possible to form bulkheads on walls of **up to 30" (76.2 cm) thick**.

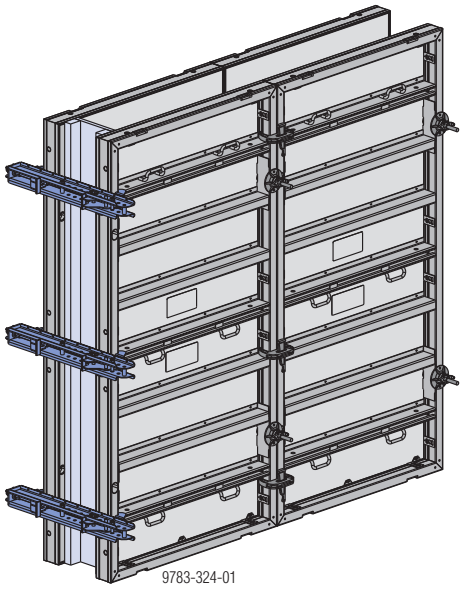
**Note:**
If the concrete pressure is reduced, wall thicknesses of up to 36" (91.5 cm) are also possible.



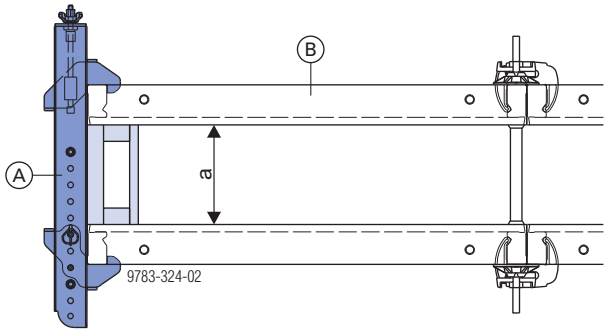

a ... up to 30" (76.2 cm), in 2" (5.1 cm) increments

| | |
|---|---|
| **A** | Framax S Xlife universal panel 1.22m |
| **B** | Framax universal fixing bolt + Super-plate 15.0 |
| **C** | Framax S Xlife panel (panel width > 0.30m) |

## with stop-end waler ties




The Stop-end waler tie lets you form bulkheads steplessly, from wall thicknesses of 6" (15 cm) to 30" (75 cm).




a ... 6" (15 cm) to 30" (75 cm)

**A** Framax stop-end waler tie

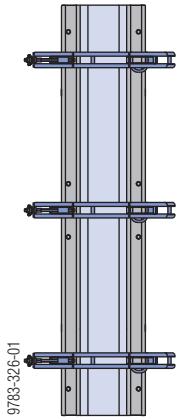
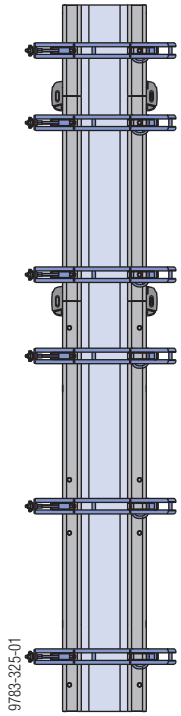
**B** Framax S Xlife panel

### Required numbers of Framax stop-end waler ties:

| Wall thickness | Panel height (upright panels) | Stop-end waler ties |
|---|---|---|
| 6" - 18" (15 - 45 cm) | 1.35 m | 2 |
| | 2.70 m | 2 |
| >18" - 30" (>45 - 75 cm) | 1.35 m | 2 |
| | 2.70 m | 3 |

| Wall thickness | Panel width (horizontal panels) | Stop-end waler ties |
|---|---|---|
| 6" - 30" (15 - 75 cm) | 0.30 m | 1 |
| | 0.45 m | 1 |
| | 0.60 m | 1 |
| | 0.75 m | 2 |
| | 0.90 m | 2 |
| | 1.05 m | 2 |
| | 1.35 m | 2 |

### Positioning the stop-end waler ties:

| Example for formwork height 8'-10 1/4" (2.70 m) | Example for formwork height 15'-3" (4.65 m) |
|---|---|
|  |  |
|  |  |

# with Universal walings

Universal walings make it possible to **form bulkheads continuously across any thickness of wall**.

**Framax S universal waling:**
Permitted moment: 3.85 kip-ft (5.2 kNm)

There are **2 possible ways** of **fastening the universal walings**:

- with universal fixing bolts
- with bulkhead ties

## Universal fixing bolts

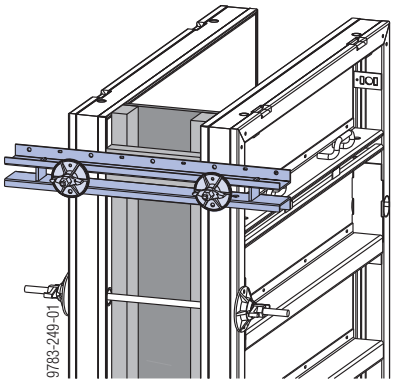
**Required number of universal walings:**

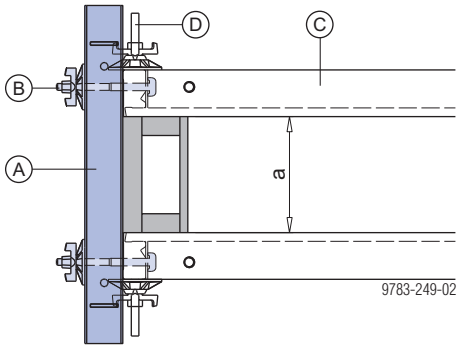
| Panel height | N° of universal walings |
|---|---|
| 1.35 m | 2 |
| 2.70 m | 4 |

**Framax universal fixing bolt:**
Permitted tensile force in the cross borehole of the Framax S Xlife panel: 5.6 kip (25.0 kN)

### Panel widths 0.45m to 1.35m

The universal walings are mounted using universal fixing bolts and Super-plates 15.0 fixed through the cross boreholes in the panels.



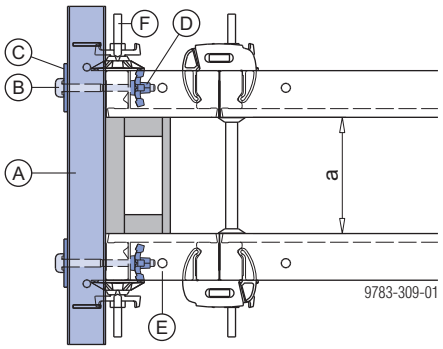




a ... up to 30" (76.2 cm)

| | |
|---|---|
| **A** | Framax S universal waling |
| **B** | Framax universal fixing bolt + Super-plate 15.0 |
| **C** | Framax S Xlife panel (panel width > 0.30m) |
| **D** | Form-tie |

### Panel width 0.30m

The universal walings are mounted using universal fixing bolts, anchor plates 3/4" and star grip nuts 15.0 G fixed through the cross boreholes in the 0.30m wide panels.



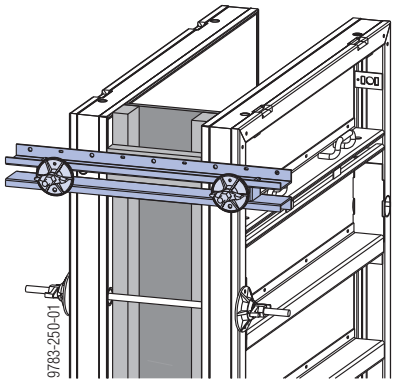

a ... up to 30" (76.2 cm)

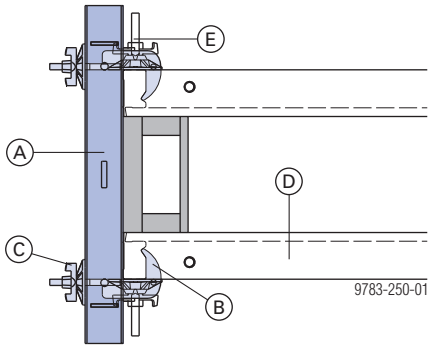
| | |
|---|---|
| **A** | Framax S universal waling |
| **B** | Framax universal fixing bolt |
| **C** | Anchor plate 3/4" |
| **D** | Star grip nut 15.0 G |
| **E** | Framax S Xlife panel 0.30m |
| **F** | Form-tie |

**Note:**
This method of mounting the universal walings must only be used on 0.30m wide panels.

## Bulkhead ties

The universal walings or multi-purpose walings are fastened using "Framax stop-end ties" and super-plates. This enables you to **form bulkheads continuously, even across large thicknesses of wall**.




**A** Framax S universal waling or Multi-purpose waling WS10 Top50
**B** Framax stop-end tie (clamping range: 3 1/2" - 5" (9 - 13 cm))
**C** Super-plate 15.0
**D** Framax S Xlife panel
**E** Form-tie

**Position of the bulkhead ("stop-end") ties:**

In order to ensure uniform load transfer, the bulkhead ties should be fitted in the middle (between two cross profiles) wherever possible.

**Framax stop-end tie:**
Permitted capacity: 3.37 kip (15.0 kN)

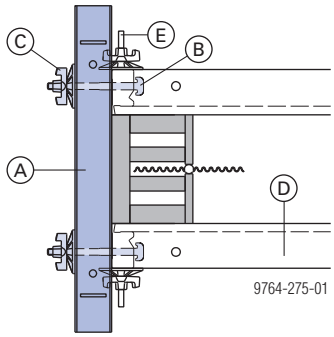
**Multi-purpose waling WS10 Top50:**
Permitted moment: 8.5 kip-ft (11.5 kNm)

| Panel height: **2.70m**<br>Pressure of fresh concrete: **1650 psf (80 kN/m²)** | |
|---|---|
| Wall thickness | Universal walings / multipurpose walings |
| up to 12" (30 cm) | 2 |
| up to 14" (35 cm) | 3 |
| up to 18" (45 cm) | 4 |
| up to 24" (60 cm) | 5 |
| up to 30" (75 cm) | 6 |

| **Horizontal panels** | | |
|---|---|---|
| Panel width | Wall thickness | Universal walings / multipurpose walings |
| up to 0.45 m | up to 30" (75 cm) | 1 |
| up to 1.05 m | | 2 |
| over 1.05m | up to 24" (60 cm) 1) | 2 |

1) A wall thickness of up to 30" (75 cm) is also permitted where the following condition is met:
The over 1.05m wide horizontal (i.e. sideways-placed) panel must be placed at the top of the gang.

## Bulkheads with waterstops



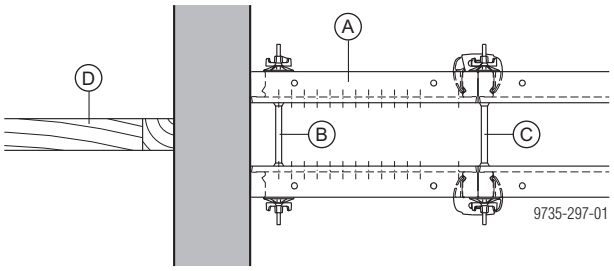

**A** Framax S universal waling or Multi-purpose waling WS10 Top50
**B** Framax universal fixing bolt or Framax stop-end tie
**C** Super-plate 15.0
**D** Framax S Xlife panel
**E** Form-tie

# Wall junctions, offsets and steps

## Connecting to existing walls

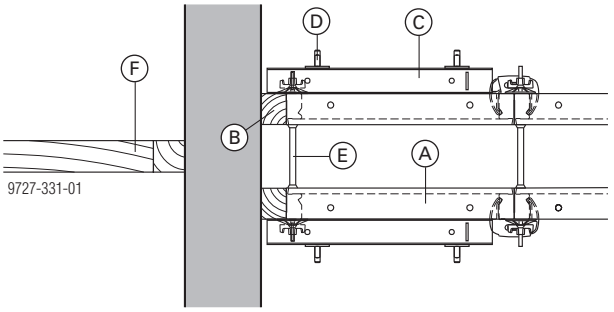
### Right-angled connections

#### with a Framax Xlife universal panel




**A** Framax S Xlife universal panel
**B** Form-tie system 15.0
(on the Universal panel 2.70m, 3 form-ties are required, one in the first hole of each perforated profile)
**C** Form-tie
**D** In-place timber brace

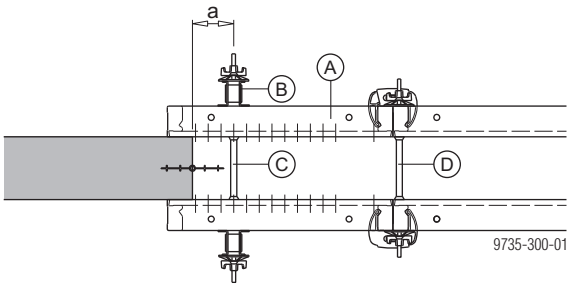
#### with Framax Xlife panel and dimensional lumber




**A** Framax S Xlife panel
**B** Dimensional lumber (min. 2 1/2" up to max. 8" (min. 6.5 cm up to max. 20 cm))
**C** Framax S universal waling
**D** Framax wedge clamp
**E** Form-tie
**F** In-place timber brace

### In-line connections

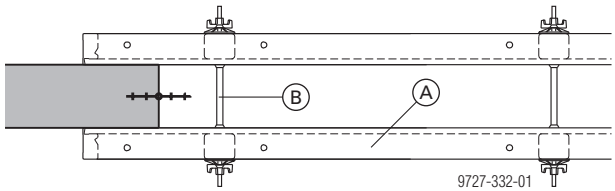
#### with a Framax Xlife universal panel




a ... max. 8" (20 cm)

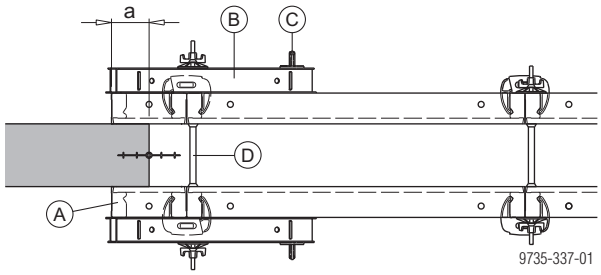
**A** Framax S Xlife universal panel
**B** Framax S universal waling 1.50m
**C** Form-tie system 15.0
(in the Universal panel 2.70m, 3 form-ties are needed)
**D** Form-tie

#### with Framax Xlife panel 2.40x2.70m




**A** Framax S Xlife panel 2.40x2.70m
**B** Form-tie

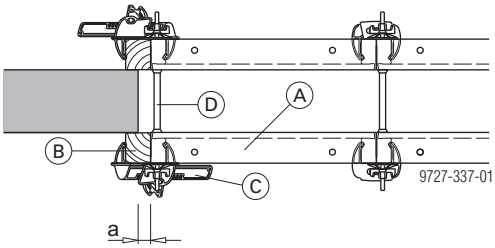
#### with Framax Xlife panel 0.30m




a ... min. 1/2" (1 cm)

**A** Framax S Xlife panel 0.30m
**B** Framax S universal waling
**C** Framax wedge clamp
**D** Form-tie

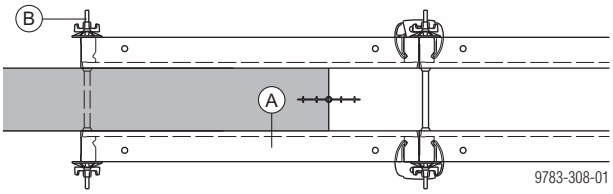
### with Framax Xlife panel and dimensional lumber




a ... max. 2" (5 cm)

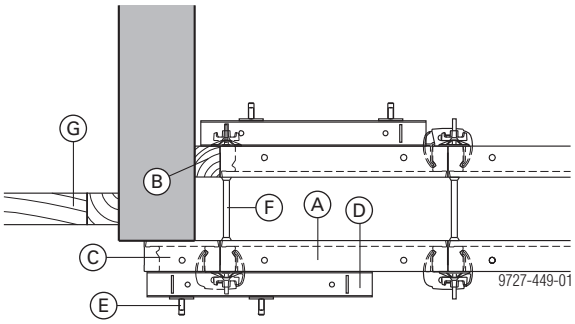
**A** Framax S Xlife panel
**B** Dimensional lumber
**C** Framax multi-function clamp
**D** Form-tie

### with a Framax Xlife panel from the previous casting section:




**A** Framax S Xlife panel
**B** Form-tie

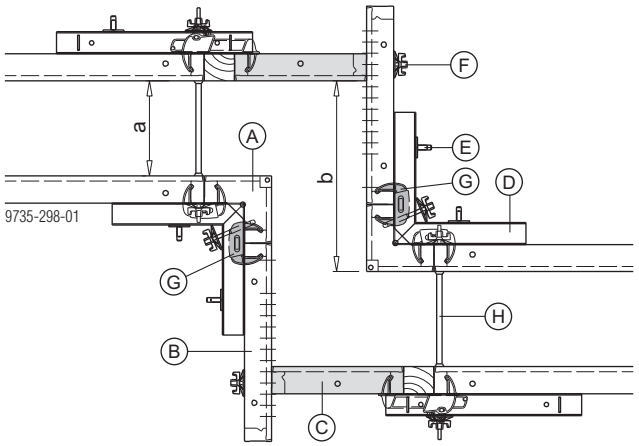
## Corner connections




**A** Framax S Xlife panel
**B** Dimensional lumber (min. 2 $^1/_2$" up to max. 8" (min. 6.5 cm up to max. 20 cm))
**C** Framax S Xlife panel 0.30m
**D** Framax S universal waling
**E** Framax wedge clamp
**F** Form-tie
**G** In-place timber brace

# Wall steps

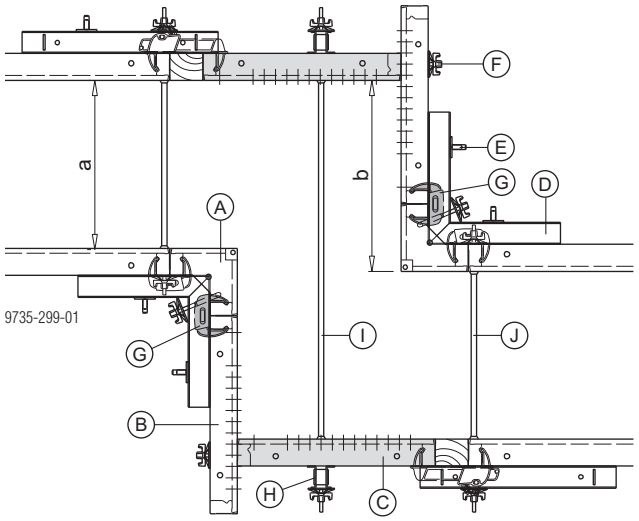
## wall thicknesses up to 17" (43 cm)




a ... up to 17" (43 cm)
b ... max. 36" (91 cm)

| | |
|---|---|
| **A** | Framax S Xlife inside corner |
| **B** | Framax S Xlife universal panel |
| **C** | Framax S Xlife panel (max. width 0.60m) |
| **D** | Framax S universal corner waling (3 for every 2.70 m of formwork height) |
| **E** | Framax wedge clamp |
| **F** | Super-plate 15.0 + Framax universal fixing bolt |
| **G** | Framax quick-acting clamp RU (4 for every 2.70 m of formwork height) |
| **H** | Form-tie |

## wall thicknesses up to 30" (76 cm)

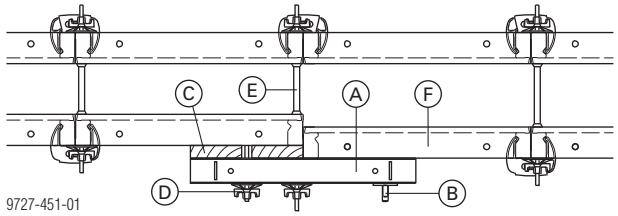



a ... up to 30" (76 cm)
b ... max. 36" (91 cm)

| | |
|---|---|
| **A** | Framax S Xlife inside corner |
| **B** | Framax S Xlife universal panel |
| **C** | Framax S Xlife universal panel 0.90m |
| **D** | Framax S universal corner waling (3 for every 2.70 m of formwork height) |
| **E** | Framax wedge clamp |
| **F** | Super-plate 15.0 + Framax universal fixing bolt |
| **G** | Framax quick-acting clamp RU (4 for every 2.70 m of formwork height) |
| **H** | Framax S universal waling 1.50m |
| **I** | Form-tie system 15.0 (in the Universal panel 2.70m, 3 form-ties are needed) |
| **J** | Form-tie |

# Wall offsets

### one-sided wall offset up to max. 4 3/4" (12 cm)

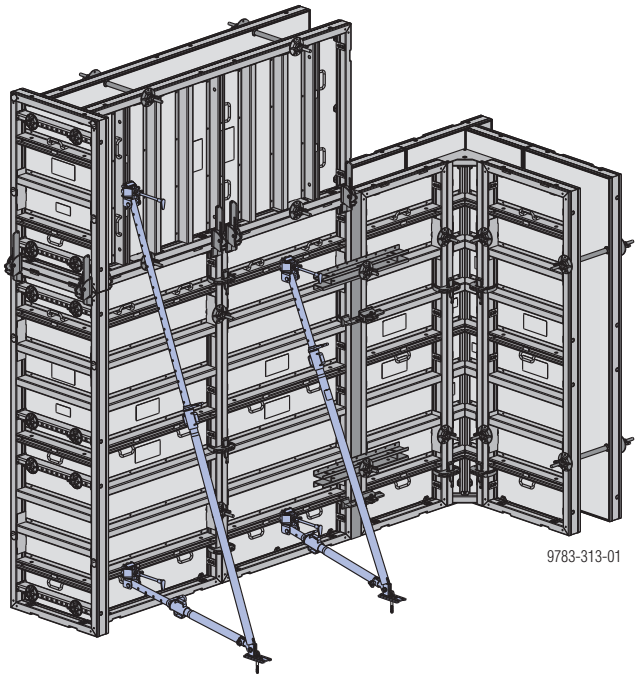



| | |
|---|---|
| **A** | Framax S universal waling |
| **B** | Framax wedge clamp |
| **C** | Dimensional lumber |
| **D** | Super-plate 15.0 + Framax universal fixing bolt 10-25cm |
| **E** | Form-tie |
| **F** | Framax S Xlife panel |

**Note:**

On short walls (high longitudinal tensile forces), bracing is necessary.

# Plumbing accessories




**Panel struts and pipe braces** brace the formwork against wind loads and make it easier to plumb and align.

**Important note:**

The formwork gangs must be securely braced in **every** phase of the construction work!

Observe all applicable safety rules!

For more information (wind loads etc.) see the section headed "Vertical and horizontal loads" in the Doka Calculation Guide.

See "Vertical stacking of panels" for the positions of the Framax quick-acting clamps RU, Framax multi-function clamps and Framax universal walings that are needed when stacking.

**Note:**

Every gang-form must be supported by **at least 2 panel struts**.

**Max. influence widths of panel struts or pipe braces:**

| Formwork height | Panel strut / pipe brace | Max. influence width assuming wind pressure of | |
|---|---|---|---|
| | | **10 psf** (0.48 kN/m²) | **15 psf** (0.72 kN/m²) |
| 10'-10" (3.30 m) | **340** | 8'-10" (2.70 m) | 5'-11" (1.80 m) |
| 13'-3" (4.05 m) | **340** | 8'-10" (2.70 m) | 5'-11" (1.80 m) |
| 17'-9" (5.40 m) | **540** [1] | 8'-10" (2.70 m) | 5'-11" (1.80 m) |
| 19'-8" (6.00 m) | **540** [1] | 8'-10" (2.70 m) | 5'-11" (1.80 m) |
| 23'-7" (7.20 m) | **540** [1] | 5'-7" (1.70 m) | 3'-7" (1.10 m) |
| 23'-7" (7.20 m) | **540** [1] + **22'-0"-40'-0"** [2] | 11'-6" (3.50 m) 13'-3" (4.05 m) | 7'-6" (2.30 m) 10'-6" (3.20 m) |
| 26'-7" (8.10 m) | **540** [1] + **22'-0"-40'-0"** [2] | 10'-0" (3.05 m) 13'-3" (4.05 m) | 6'-6" (2.00 m) 9'-6" (2.90 m) |
| 29'-6" (9.00 m) | **540** [1] + **22'-0"-40'-0"** [2] | 10'-6" (3.20 m) 10'-0" (3.05 m) | 7'-0" (2.10 m) 6'-6" (2.00 m) |
| 31'-0" (9.45 m) | **540** [1] + **22'-0"-40'-0"** [2] | 11'-6" (3.50 m) 8'-6" (2.60 m) | 7'-6" (2.30 m) 5'-6" (1.65 m) |
| 35'-5" (10.80 m) | **540** [1] + **22'-0"-40'-0"** [2] | 8'-6" (2.60 m) 6'-6" (2.00 m) | 5'-6" (1.65 m) 4'-6" (1.35 m) |
| Max. anchoring load: **3 kip (13.5 kN)** | | | |

[1] or Pipe brace 12'-0"-21'-0"
[2] or Eurex 60 550

These values apply up to wind-pressures of 10 psf (0.48 kN/m²) or 15 psf (0.72 kN/m²) respectively. The greater wind loads encountered at exposed formwork-ends must be constructionally sustained by additional plumbing accessories (e.g. struts or pipe-braces).
The number of struts must be determined separately for:
- wind pressure above 15 psf (0.72 kN/m²)
- formwork higher than 35'-5" (10.80 m)

**Sample calculation:**

- Formwork height: 26'-7" (8.10 m)
- Width of gang-form: 17'-9" (5.40 m)
- Wind pressure: 10 psf (0.48 kN/m²)

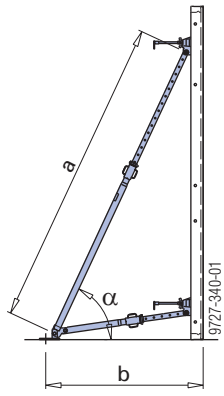
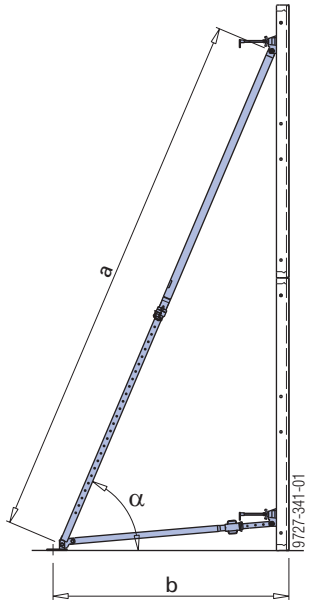
Result:

- 2 Panel struts 540 (or 2 Pipe braces 12'-0"-21'-0") and
- 2 Pipe braces 22'-0"-40'-0" (or 2 Eurex 60 550)

# Panel struts 340 and 540

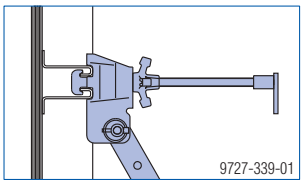
**Product features:**

- Can be telescoped in a 3" (8 cm) grid
- Fine adjustment by screw-thread
- All parts are captively integrated – including the telescopic tube (has anti-dropout safeguard)

| Panel strut 340 | Panel strut 540 |
|---|---|
|  |  |
| a ... 6'-4" - 11'-2" (191 - 341 cm)<br>b ... 3'-6" - 5'-0" (105 - 154 cm) | a ... 10'-3" - 18'-0" (311 - 549 cm)<br>b ... 6'-6" - 8'-0" (197 - 245 cm) |

α ... approx. 60°

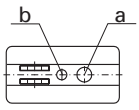
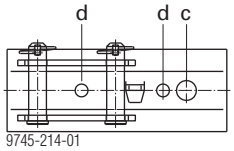
## Connection in the waling profile




## Fixing to the floor

➤ Anchor the plumbing accessories in such a way as to resist tensile and compressive forces!

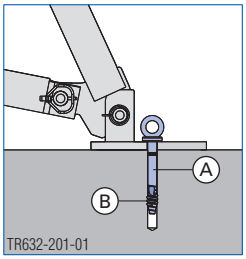
### Boreholes in the footplates

| Panel strut 340, 540 | Eurex 60 550 |
|---|---|
|  |  |

a ... ø 1" (26 mm)
b ... ø$^{11}/_{16}$" (18 mm)
c ... ø 1 $^{1}/_{8}$" (28 mm)
d ... ø$^{11}/_{16}$" (18 mm)

### Anchoring the footplate

The **Doka Express anchor** can be re-used many times over - the only tool needed for screwing it in is a hammer.




**A** Doka Express anchor 16x125mm
**B** Doka coil 16mm

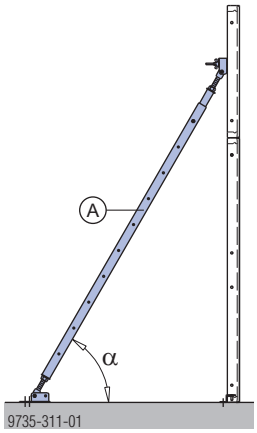
Cylinder compressive strength of concrete:
min. 3,000 psi (20 N/mm²)

Follow the Fitting Instructions!

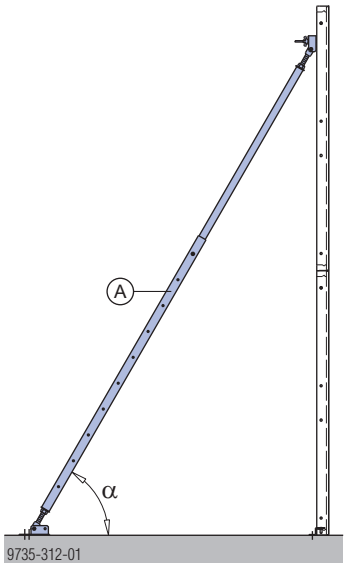
**Required safe working load of alternative anchor for foot-plates:** min. 3.0 kip (13.5 kN)
Follow the manufacturer's applicable fitting instructions.

# Pipe brace 12'-0"-21'-0" and Pipe brace 22'-0"-40'-0"

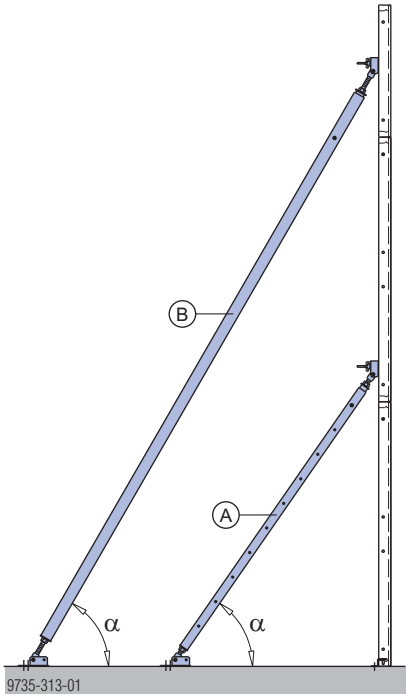
Formwork heights up to 13'-4" (4.05 m)



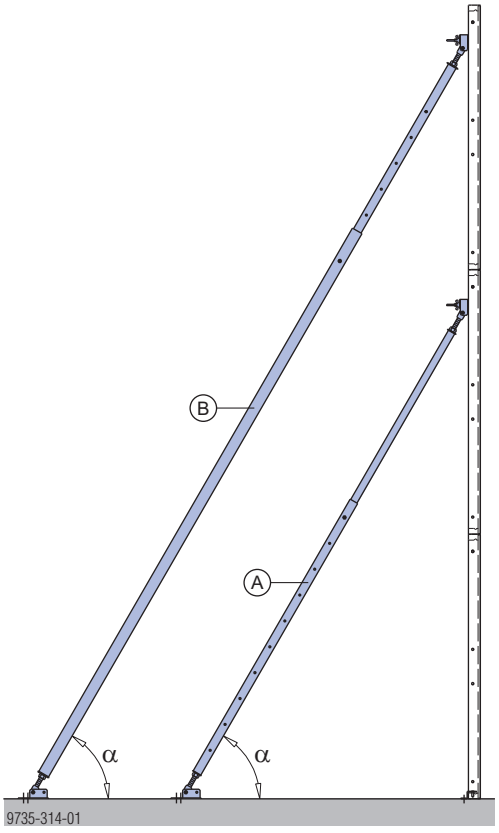

Formwork heights up to 17'-8" (5.40 m)




Formwork heights up to 22'-2" (6.75 m)




Formwork heights up to 26'-7" (8.10 m)




α ... approx. 60°

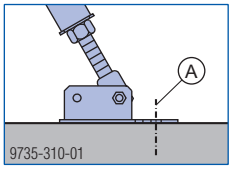
**A** Pipe brace 12'-0"-21'-0"

**B** Pipe brace 22'-0"-40'-0"

## Fixing to the floor

➤ Anchor the plumbing accessories in such a way as to resist tensile and compressive forces!

### Anchoring the footplate



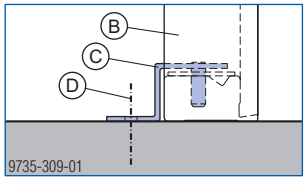

**A** Drill-in anchor ø$^{3}/_{4}$" (20 mm)

**Required safe working load of alternative anchor for foot-plates:** min. 3.0 kip (13.5 kN)

Follow the manufacturer's applicable fitting instructions.

### Fixing the panels

The Bracing clip Framax S is fitted into the cross boreholes of the bottom frame profile and anchored to the ground.




**B** Framax S Xlife panel

**C** Bracing clip Framax S

**D** Dowel-type anchor ø$^{1}/_{2}$" (12 mm)

Number and positioning of Bracing clips Framax S:

- One Bracing clip Framax S is needed for each pipe brace.
- Fit the Bracing clip Framax S to the cross borehole nearest the pipe brace.

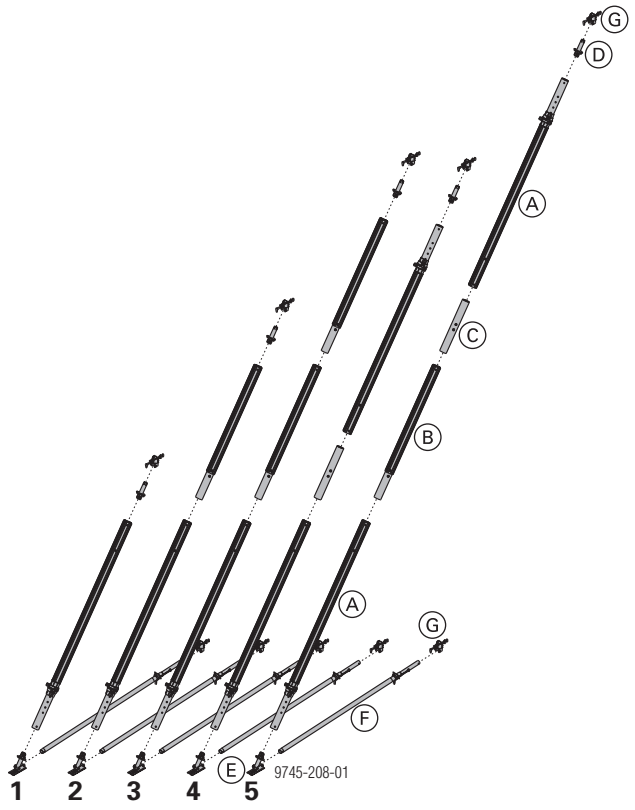
**Required load-bearing capacity of the dowel-type anchor:**
Tensile force: 1,000 lbs (4.5 kN) where the simultaneously acting shear force is 1,000 lbs (4.5 kN)

Follow the manufacturer's applicable fitting instructions.

## Eurex 60 550 used as a strut or pipe-brace

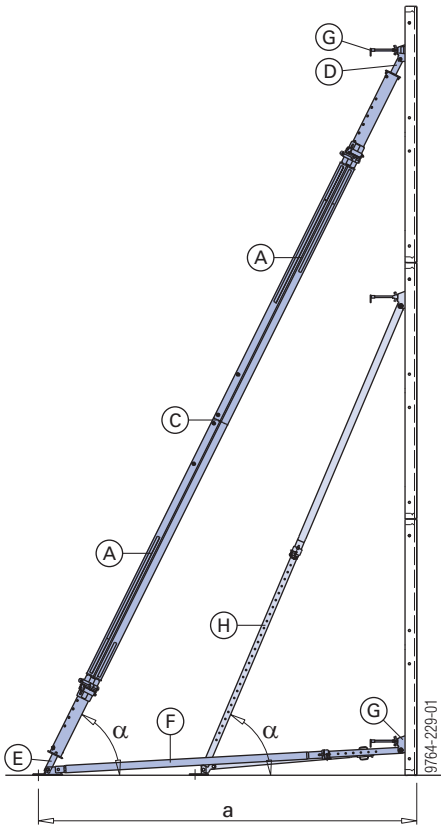
As the "Doka plumbing strut Eurex 60 550" – fitted with the appropriate accessories – this prop can also be used for **shoring high wall formwork**.

- Can be connected directly – without modification – to Doka framed formwork and Doka timber-beam formwork.
- The "Adjusting strut 540 Eurex 60" makes handling much easier, especially when the formwork is being transferred.
- Can be telescoped in 4" (10 cm) increments, with continuous fine adjustment.




| Type | Extension length | Plumbing strut Eurex 60 550 **(A)** | Extension Eurex 60 2.00m **(B)** | Coupler Eurex 60 **(C)** | Connector Eurex 60 **(D)** | Plumbing strut shoe Eurex 60 **(E)** | Adjusting strut 540 Eurex 60 **(F)** | Prop head **(G)** | Weight |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12'-5" - 19'-4" (3.79 - 5.89 m) | 1 | --- | --- | 1 | 1 | 1 | 2 | 200 lbs (91.1 kg) |
| 2 | 19'-0" - 25'-10" (5.79 - 7.89 m) | 1 | 1 | --- | 1 | 1 | 1 | 2 | 248 lbs (112.4 kg) |
| 3 | 25'-7" - 32'-5" (7.79 - 9.89 m) | 1 | 2 | --- | 1 | 1 | 1 | 2 | 295 lbs (133.7 kg) |
| 4 | 23'-8" - 37'-5" (7.22 - 11.42 m) | 2 | --- | 1 | 1 | 1 | 1 | 2 | 314 lbs (142.5 kg) |
| 5 | 30'-3" - 44'-0" (9.22 - 13.42 m) | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 360 lbs (163.8 kg) |

## Example of a possible combination of Type 4




a ... 11'-3" - 19'-0" (341 - 580 cm)
α ... approx. 60°

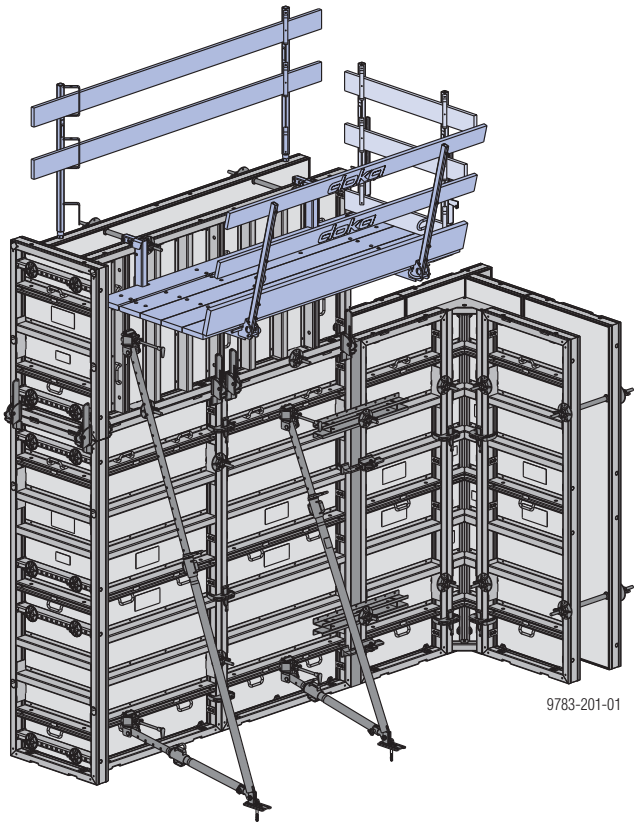
| | |
|---|---|
| **A** | Plumbing strut Eurex 60 550 |
| **B** | Extension Eurex 60 2.00m |
| **C** | Coupler Eurex 60 |
| **D** | Connector Eurex 60 |
| **E** | Plumbing strut shoe Eurex 60 |
| **F** | Adjusting strut 540 Eurex 60 |
| **G** | Prop head |
| **H** | Panel strut 540 |

**The rule-of-thumb here is:**

The length of the strut or pipe-brace (i.e. the complete Eurex 60 550 plumbing-strut assembly) = the height of the gang to be braced.

# Pouring platforms

can be quickly readied for use, and make concreting both easy and safe.




**Preconditions for use:**

Observe all applicable safety rules.

Only fix the pouring platform onto formwork constructions that are sufficiently stable to transfer the expected loads.

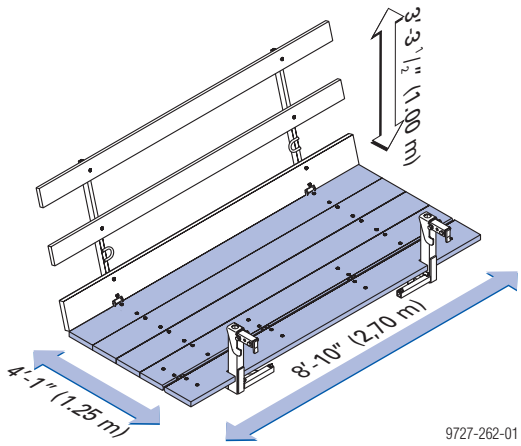
Ensure that the formwork gang has sufficient stiffness.

Also brace the formwork in a windproof manner when erecting it and when it is temporarily "parked" in the standing position.

- If the formwork is lifted with the pouring platform still mounted to it, the platform must be secured so that it cannot slip to either side.
- It is NOT allowed to place the formwork on its side while the pouring platform is still mounted!
- Horizontal panels in vertically stacked configurations must also be tied at the top edge when used with pouring platforms!
- For length adjustments, it may be necessary to place floor planking as a bridge (max. 19" (50 cm)) between two platforms. Minimum plank overlap: 10" (25 cm).

# Framax pouring platform U 1.25/2.70m

A pre-assembled, foldable, ready-to-use platform, 4'-1" (1.25 m) wide, for convenient and safe working.



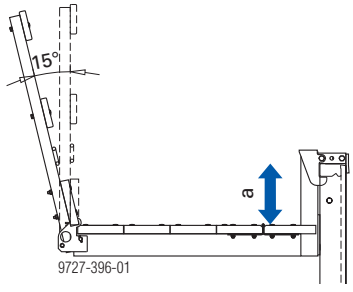

**Permitted service load:**

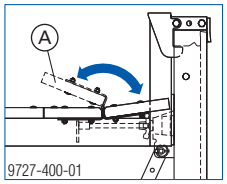
- to **OSHA 1926**, Subpart L: **30 psf (150 kg/m²)**
- to **CAN/CSA S269.2** - "Access scaffolding for Construction Purpose" (Light duty scaffold): **25 psf (120 kg/m²)**

Other possible areas of use for the Framax pouring platform U:

- Large-area formwork Top50 (with Top50 adapter for Framax pouring platform U)
- Doka wall formwork FF 20 (with FF20 adapter for Framax pouring platform U)

- The level of the floor planking is 12" (30 cm) below the top edge of the formwork. This means that there is a "boundary" on the side facing the formwork.
- The guard rail can be locked in either of two positions:
  - vertical
  - tilted by 15°
- Tilt-back board:
  - The front plank can be tilted back so that panel struts can be attached to the panel.
  - This lets you get at form-ties at the top of the formwork, and makes room for any projecting universal walings.



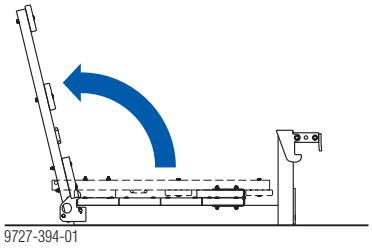




a ... 12" (30 cm)

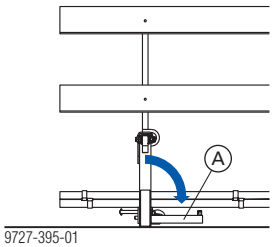
**A** Tilt-back board

**Preparing the pouring platform:**

➤ Tilt up the guard rails and lock them in position.




➤ Put both side stops into position.

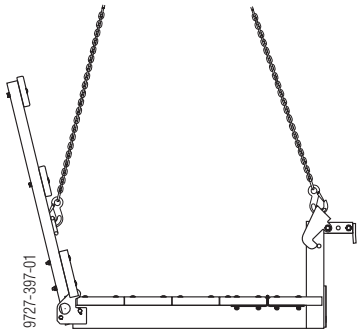



**A** Side stop

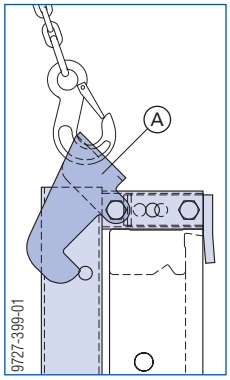
➤ Close the planking with the tilt-back board.

**Lifting the platform onto the formwork:**

➤ Attach a four-part lifting tackle (e.g. Doka 4-part chain 3.20m) to the pouring platform and hoist it towards the formwork.



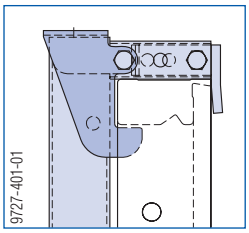

➤ Fix the pouring platform to the top of the formwork.




**A** Safety hook

➤ Detach the four-part lifting tackle.
The safety hooks latch into place automatically.

Do a sight check to make sure that the safety hooks have latched into place!



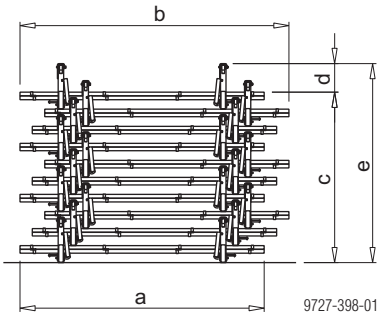

The pouring platform is now secured against accidental lift-out.

**Lifting the platform off the formwork:**

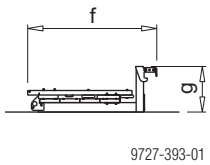
➤ Attach a four-part lifting tackle to the pouring platform and raise it.
When the pouring platform is raised by the four-part lifting tackle on the safety hook, the platform is automatically unlocked.

## Transporting, stacking and storing

Stack of 10
Framax pouring platforms U




Single folded-down platform




a ... 8'-10" (268 cm)
b ... 9'-8" (295 cm)
c ... 10 x 7 3/8" (10 x 18.7 cm)
d ... 12 1/4" (31 cm)
e ... approx. 7'-2" (218 cm)
f ... 4'-8" (142 cm)
g ... 19 1/2" (50 cm)

# Pouring-platforms with single brackets

**Preconditions for use:**

Observe all applicable safety rules.

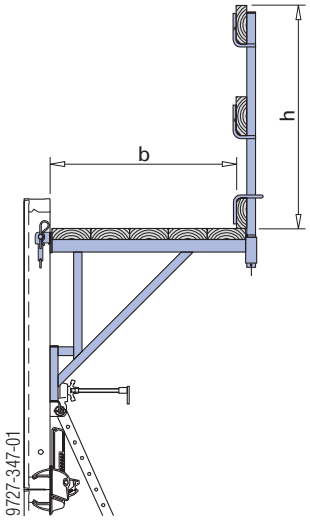
Only fix the pouring platform onto formwork constructions that are sufficiently stable to transfer the expected loads.

Ensure that the formwork gang has sufficient stiffness.

Also brace the formwork in a windproof manner when erecting it and when it is temporarily "parked" in the standing position.

## Framax bracket 90

With the Framax bracket 90, pouring platforms with a platform width of 34" (90 cm) can be assembled. These pouring platforms can easily be mounted by hand.




b ... 34" (90 cm)
h ... 40" (103 cm)

**Permitted service load:**

- to **OSHA 1926**, Subpart L:
  **30 psf (150 kg/m²)**
- to **CAN/CSA S269.2** - "Access scaffolding for Construction Purpose" (Light duty scaffold):
  **25 psf (120 kg/m²)**

Max. influence width: 6'-6" (2.00 m)

The brackets must be secured against accidental lift-out

**Note:**

The scaffold planks and guard-rail material shall meet or exceed any local, state, provincial or national regulations.

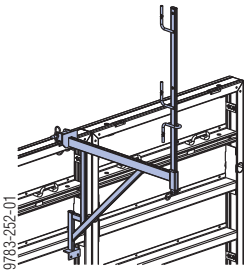
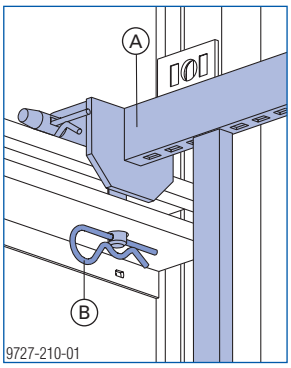
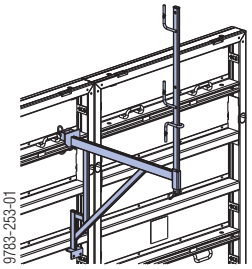
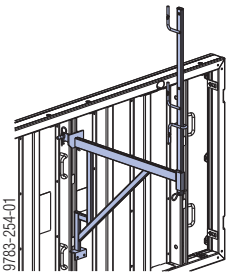
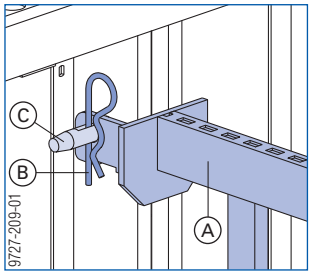
**Scaffold planks and guard-rail planks:** Per 3'-3" (1.0 m) length of platform, 9.7 sqft (0.9 m²) of scaffold planks and 3.8 sqft (0.35 m²) of guard-rail planks are needed (site-provided).

Plank thicknesses for support centers of up to 6'-6" (2.00 m):

- 3 scaffold planks min. 1 1/2 x 9 1/2" (4 x 24 cm)
- 1 scaffold plank min. 1 1/2 x 5 1/2" (4 x 14 cm)
- 2 guard-rail planks min. 1 1/2 x 3 1/2" (4 x 9 cm)
- 1 guard-rail plank min. 1 1/2 x 5 1/2" (4 x 14 cm) (toeboard)

**Fastening the scaffold planks:**
with 4 carriage bolts 3/8-16 x 4 3/4 (cup square screws M 10x120) per bracket (not included with product).

**Fastening the guard-rail boards:** Use nails

| Possible ways of fixing | Lift-out guard |
|---|---|
| **In the frame profile**   |   |
| **In the cross profile**   | |
| **In the cross profile on horizontal panels**   |   |

**A** Framax bracket 90
**B** Spring cotter
**C** Wedge bolt RA 7.5

**Note:**

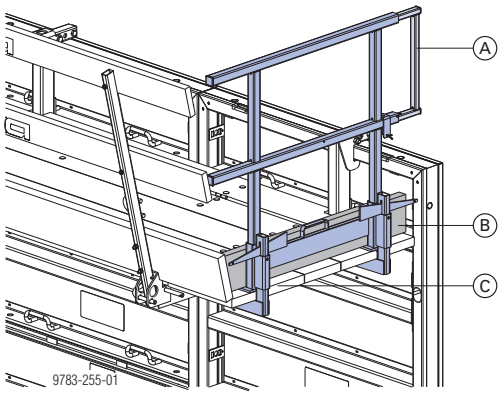
Where brackets need to be fixed to the middle cross profile of upright Framax Xlife universal panels 2.70m (2008 models onward), this can also be done in the left-hand borehole.

# Sideguards on exposed platform-ends / opposing guard-rail

## Sideguards on exposed platform-ends

On pouring scaffolds that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

### Side handrail clamping unit T




**A** Integrated telescopic handrail

**B** Guard-rail plank min. 2x6 (1 1/2" x 5 1/2" (4 x 14 cm)), site-provided

**C** Pouring platform

The sideguard consists of:

- 1 Side handrail clamping unit T
- 1 guard-rail plank min. 1 1/2" x 5 1/2" (4 x 14 cm), site-provided

**How to mount:**

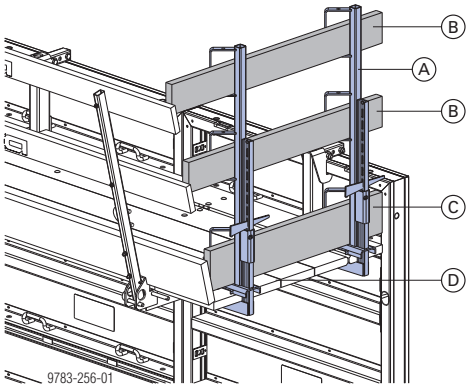
➤ Fasten the clamping part to the floor planking of the pouring scaffold, using the wedge (clamping range 1 1/2" to 2 1/3" (4 to 6 cm)).

➤ Slot in the railing.

➤ Extend the telescopic railing to the desired length and secure it.

➤ Insert footguard (guard-rail plank).

### Handrail clamp S




**A** Handrail clamp S

**B** Guard-rail plank min. 2x4 (1 1/2" x 3 1/2" (4 x 9 cm)), site-provided

**C** Guard-rail plank min. 2x6 (1 1/2" x 5 1/2" (4 x 14 cm)), site-provided

**D** Pouring platform

The sideguard consists of:

- 2 Handrail clamps S
- 2 guard-rail planks min. 1 1/2" x 3 1/2" (4 x 9 cm), site-provided
- 1 guard-rail plank min. 1 1/2" x 5 1/2" (4 x 14 cm), site-provided

**How to mount:**

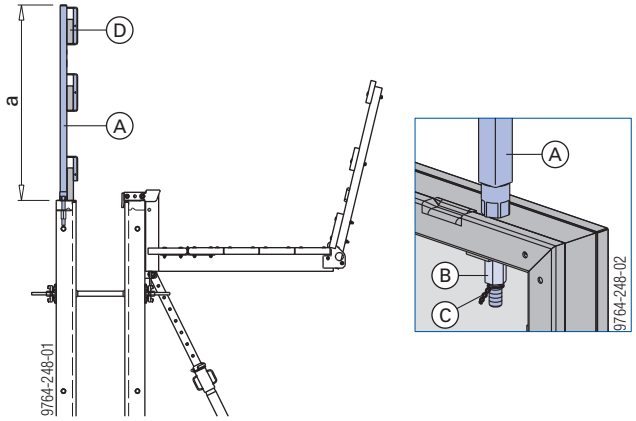
➤ Fasten the handrail clamps to the deck planking of the pouring scaffold, using the wedge (clamping range 1" - 1'-5" (2 to 43 cm)).

➤ Secure the guardrail planks to the loops on the handrail clamps with one d10 (28x65) nail per loop.

Follow the directions in the User Information booklet "Handrail clamp S"!

## Opposing guard-rail with Handrail post 1.10m

If there are working platforms mounted on one side of the formwork only, then the **Handrail post 1.10m** can be used to erect **fall-arrest railings on the opposing formwork**.




a ... 47" (120 cm)

**A** Handrail post 1.10m

**B** Hexagon nut 20.0

**C** Hexagon nut secured by e.g. binding wire

**D** Guard-rail plank

**How to mount:**

➤ Fix the Handrail post 1.10m into the cross borehole of the framed panel with a hexagon nut 20.0.

➤ Secure the Hexagon nut 20.0.

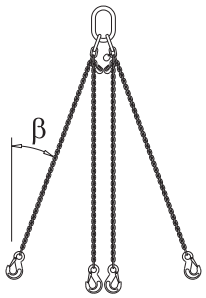
Follow the directions in the "Handrail post 1.10m" User Information!

# Resetting by crane

Safe crane-handling of Framax Xlife is made possible by the **Doka 4-part chain 3.20m** and the **Framax lifting hook**. The lifting hook locks automatically after being hung into place.

## Lifting chain

### Doka 4-part chain 3.20m for gang-forms weighing up to max. 5200 lbs (2400 kg)




➤ Attach the Doka 4-part chain 3.20m to the Framax lifting hooks.

➤ Hang the remaining chain-lengths back in place.

**Max. load-bearing capacity (as 2-part chain):**
Up to spread-angle β of 30°: 5,200 lbs (2,400 kg).

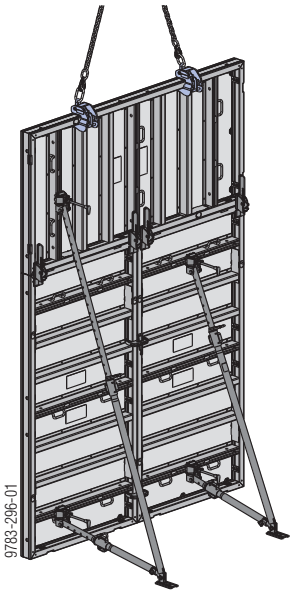
Follow the directions in the Operating Instructions!

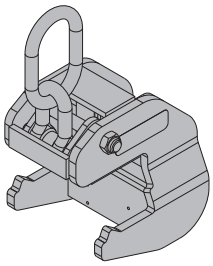
### Lifting chain for gang-forms weighing over 5200 lbs (2400 kg)

For large gang-forms, a suitably long and strongly-rated lifting chain must be used.

Follow the manufacturer's Operating Instructions!

## Framax lifting hook



**Max. load:**

- Spread-angle β up to 7.5°:
  3300 lbs (1500 kg) per Framax lifting hook
  Feasible formwork area with 2 lifting hooks:
  approx. 480 sq.ft. (45 m²)
- Spread-angle β up to 30°:
  2200 lbs (1000 kg) per Framax lifting hook
  Feasible formwork area with 2 lifting hooks:
  approx. 320 sq.ft. (30 m²)

Follow the directions in the Operating Instructions!

On larger gangs, the **Framax lifting hook 20kN** must be used together with a **2-part lifting device with sufficient load-bearing capacity**.

Follow the directions in the Operating Instructions!

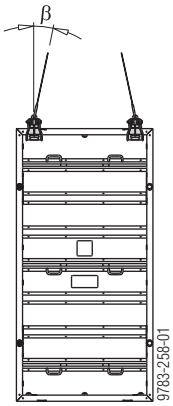
## Positioning the lifting hooks

### Single panels

Always place the Framax lifting hook over one of the welded-on metal plates, to prevent it from sliding from side to side.

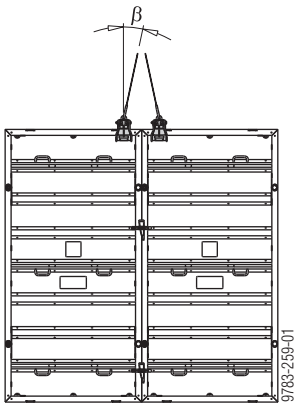
Panels up to 60 cm wide

Panels over 60 cm wide



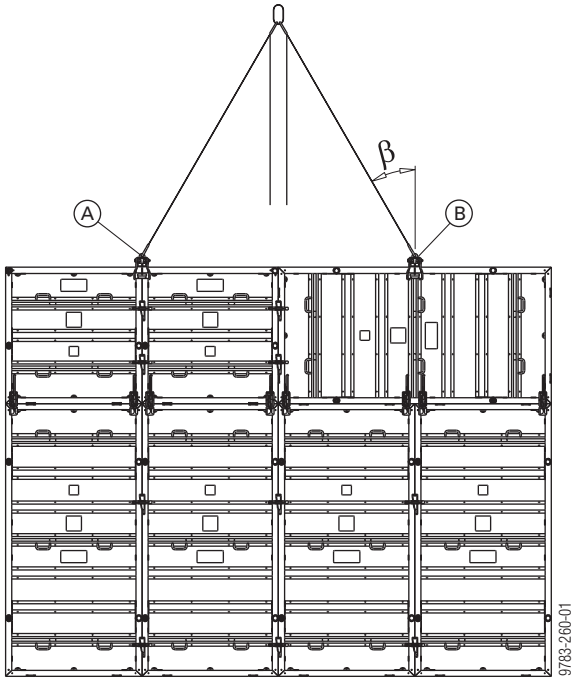

### Gang of two upright panels

Always place the Framax lifting hook over one of the welded-on metal plates, to prevent it from sliding from side to side.




### Multi-panel gang

- Always position the Framax lifting hook over the inter-panel joint **(A)** , to prevent the hook sliding from side to side.
  - **Exception:** On single panels incorporated in the gang in the horizontal, the lifting hook must be placed over a cross profile **(B)** .




**A** On upright panels
**B** On horizontal panels

- Suspend the gang-form symmetrically (center-of-gravity position).
- Spread-angle β max. 30°!
- **Before lifting:** Remove any loose items from the formwork and platforms, or secure them firmly.

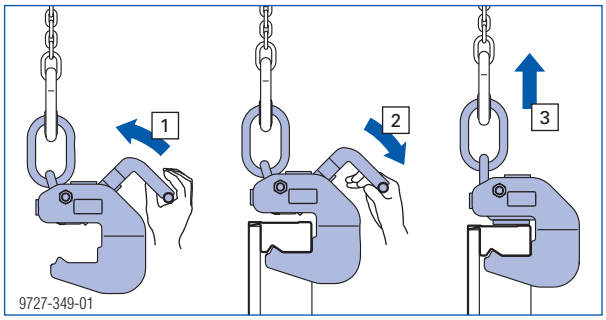
## How to operate the lifting hook

1) Raise the handle (locking lever) as far as it will go.
2) Push the lifting hook onto the frame profile as far as the rear stop, and close the handle (spring-loaded).

Do a sight-check to make sure that there is a secure form-fit between the lifting hook and the frame profile!

The handle must be closed!

3) When the panels are lifted by the crane, a load-dependent locking mechanism is activated.




## Stripping and resetting the panels

**WARNING**

The formwork tends to adhere to the concrete. When stripping the formwork, do not try to break concrete cohesion using the crane!

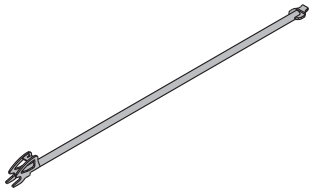
Risk of crane overload.

➤ Use suitable tools such as timber wedges or a special pry-bar to detach the formwork from the concrete.

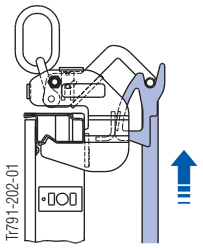
➤ Fly the gang to its next location (guide with tag-lines if necessary).

# Framax 3-in-1 pole tool

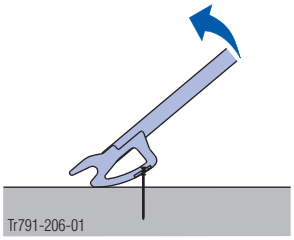
The Framax 3-in-1 pole tool has **three practical functions**:



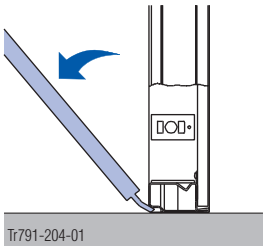
**Operating the lifting hook from ground level (up to a formwork height of 3.30 m)**




**Pulling out double-headed nails**




**Adjusting and aligning the formwork**



# Transporting, stacking and storing

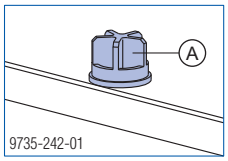
## Bundling the panels

1) Place sleepers (W x H approx. 3" x 4" (8 x 10 cm)) under the cross profile.
2) Strap the sleepers (hardwood blocking) and the bottom panel together with metal banding.

**WARNING**
The smooth surface of the powder-coated panels reduces the sticking friction.
➤ It is strictly forbidden to lift stacks of panels without inserting Framax stacking cones (2 cones per layer) first!

**Exception:** Stacking cones are not required if the stack is lifted using the "Framax transport gear".

3) Insert Framax stacking cones.

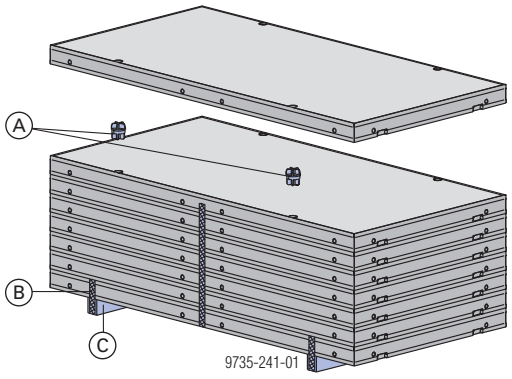



**A** Framax S stacking cone

The stacking cones secure the panels against slippage.

**CAUTION**
➤ Stack max. 8 panels on top of one another (results in a stack height, incl. sleepers, of approx. 3'-7" (110 cm)).

4) Strap the whole stack together tightly with strapping tape.

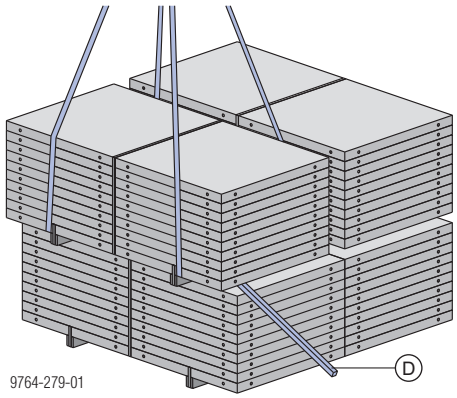



**A** Framax S stacking cone
**B** Strapping tape
**C** Sleeper

## Transporting the panels

### Dokamatic lifting strap 13.00m

The Lifting strap 13.00m is a practical tool for **offloading and loading trucks**, and for **lifting and setting down** stacks of panels.




**With closely stacked bundels of panels:**
➤ lever up the bundle (e.g. with a piece of dimensional lumber **(D)** ), to make a space for threading in the lifting equipment.
Caution!
When doing this, always make sure that the bundle of panels remains stable!

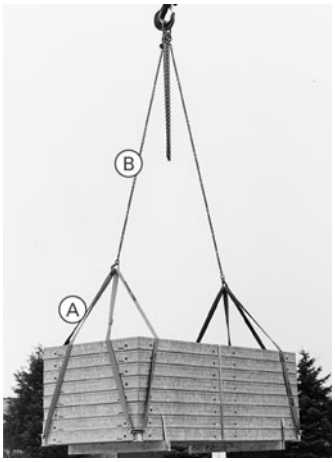
**WARNING**
➤ The Lifting straps 13.00 m may only be used as shown here if there is no risk of the straps sliding towards one another, or of the load being displaced.

Max. load: 4,400 lbs (2,000 kg)

Follow the directions in the Operating Instructions!

## Framax transport gear

For safe crane-handling of stacked panels at construction sites, builders' yards etc.




**A** Framax transport gear (consisting of 4 round slings)
**B** Chain suspension gear or Doka 4-part chain 3.20m

The four round slings of the "Framax transport gear" hold the stack together on all four sides, in such a way that it is impossible for individual panels to slide out.

Advantages:

- Spring-loaded slinging hooks reach from underneath into the continuous hardware slot of the panel frame and prevent the transport gear accidentally detaching itself when the cable tension slackens.
- The automatic length compensation feature of the Framax transport gear ensures that the load is distributed evenly.
- The Framax transport gear can easily be attached and detached by just one person working on their own.
- There is no need for anti-slippage protection using Framax stacking cones here.

Max. load: 4,400 lbs (2,000 kg) / 4 round slings

Max. stacking height: 8 panels (incl. sleepers)

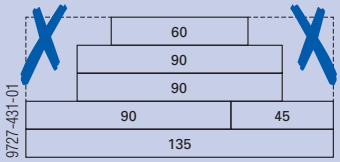
**Preconditions for use:**

The bottom layer of the stack must always consist of one panel only.

The panels in each stack must all be of the same width.

The top layers may also consist of "half-width" panels. The important thing here is that every panel must be firmly held by at least two round slings and that no "gaps" are left open between panels.

It is forbidden to transport stacks where the edges of the panels are not all in alignment!



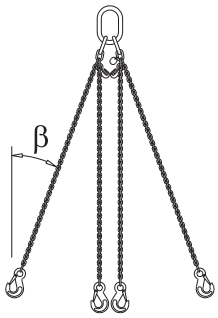

Follow the directions in the Operating Instructions!

## Doka 4-part chain 3.20m

The Doka 4-part chain 3.20m is a multi-functional slinging means:

- used with the integrated **eye-hooks** for hoisting formwork, platforms and multi-trip packaging containers

  For further information, see the section headed "Resetting by crane".
- used in conjunction with **Framax transport bolts 5kN** for hoisting stacks of panels and individual panels




The Doka 4-part chain 3.20m can be adjusted to the center-of-gravity position by shortening the lengths of the individual chains.

**Max. load:**

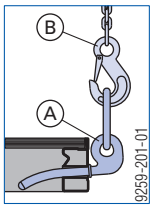
| | Spread-angle β | | | |
|---|---|---|---|---|
| | 0° | 0°-30° | 30°-45° | 45°-60° |
| Using 1 chain | 3,000 lbs (1,400 kg) | - | - | - |
| Using 2 chains | - | 5,200 lbs (2,400 kg) | 4,400 lbs (2,000 kg) | 3,000 lbs (1,400 kg) |
| Using all 4 chains | - | 7,900 lbs (3,600 kg) | 6,600 lbs (3,000 kg) | 4,600 lbs (2,120 kg) |

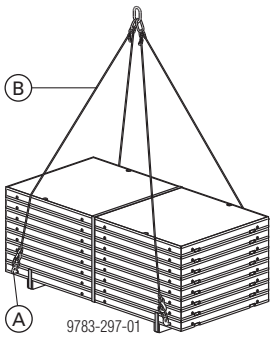
Follow the directions in the Operating Instructions!

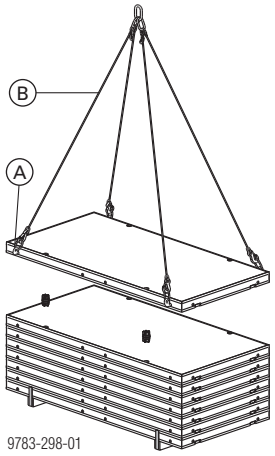
## Framax transport bolts 5kN with Doka 4-part chain 3.20m

The Framax transport bolts 5kN **(A)** , in conjunction with the Doka 4-part chain 3.20m **(B)** , are for moving panels either individually or in stacks.

| Hoisting bundled stacks of panels | Lifting panels off the stack |
|---|---|




**WARNING**

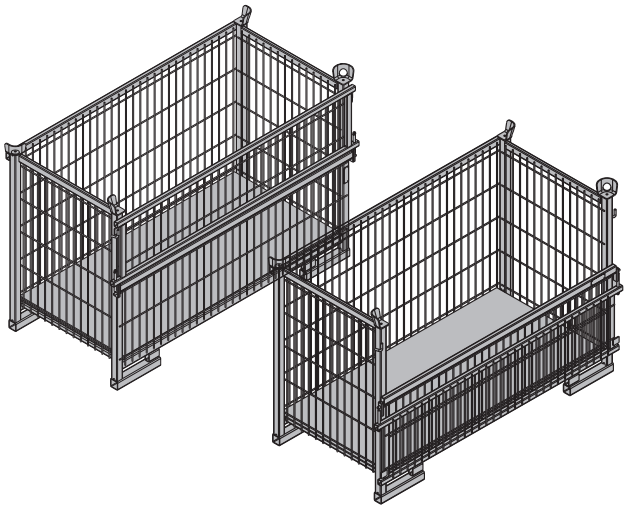
➤ It is strictly forbidden to lift stacks of panels without inserting Framax stacking cones (2 cones per layer) first!

**Max. load:**
1,100 lbs (500 kg) per Framax-transport bolt 5kN

Follow the directions in the Operating Instructions!

**Utilize the benefits of Doka multi-trip packaging on your worksite.**
Our Multi-trip packaging such as transport boxes, stacking pallets, accessory boxes and skeleton transport boxes keep everything in place on the site.

# Doka skeleton transport box 1.70x0.80m



Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

To make the "Doka skeleton transport box" easier to load and unload, one of its sidewalls can be opened.

| |
|---|
| Max. load: 700 kg |
| Permitted imposed load: 3150 kg |

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- The rating plate must be attached and clearly legible

## Using Doka skeleton transport boxes 1.70x0.80m as storage units

**Max. n° of boxes on top of one another**

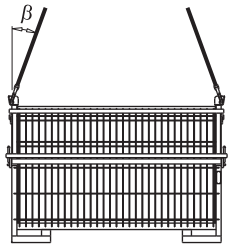
| Outdoors (on the site)<br>Floor gradient up to 3% | Indoors<br>Floor gradient up to 1% |
|---|---|
| 2 | 5 |
| It is not allowed to stack empty pallets on top of one another! | |

## Using Doka skeleton transport boxes 1.70x0.80m as transport devices

### Resetting by crane

➤ Only lift the boxes when their sidewalls are closed!

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g.: Doka 4-part chain 3.20m.
- Spread-angle β max. 30°!

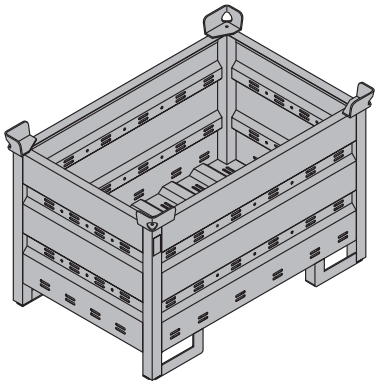



9234-203-01

### Shifting boxes with the forklift or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

# Doka multi-trip transport box 1.20x0.80m



Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

| |
|---|
| Max. load: 1500 kg<br>Permitted imposed load: 7900 kg |

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- The rating plate must be attached and clearly legible

## Using Doka multi-trip transport boxes as storage units

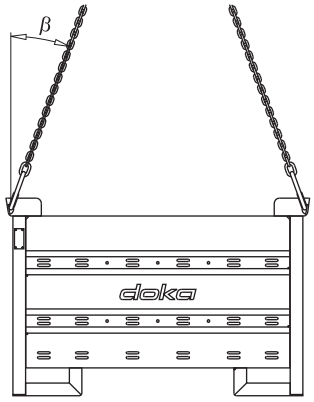
### Max. n° of boxes on top of one another

| Outdoors (on the site)<br>Floor gradient up to 3% | Indoors<br>Floor gradient up to 1% |
|---|---|
| 3 | 6 |
| It is not allowed to stack empty pallets on top of one another! | |

## Using Doka multi-trip transport boxes as transport devices

### Resetting by crane

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g.: Doka 4-part chain 3.20m.
- Spread-angle β max. 30°!



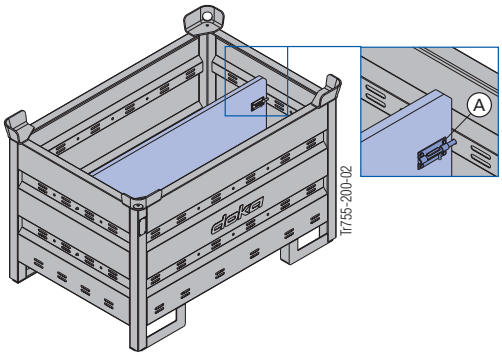

9206-202-01

### Shifting boxes with the forklift or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

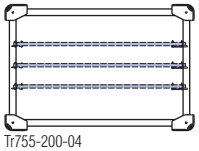
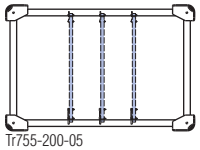
## Multi-trip transport box partition

Different items in the Multi-trip transport box can be kept separate with the Multi-trip transport box partitions 1.20m or 0.80m.




**A** Slide-bolt for fixing the partition

### Possible ways of dividing the box

| Multi-trip transport box partition | Lengthways | Crossways |
|---|---|---|
| 1.20m | max. 3 units | - |
| 0.80m | - | max. 3 units |
| |  Tr755-200-04 |  Tr755-200-05 |

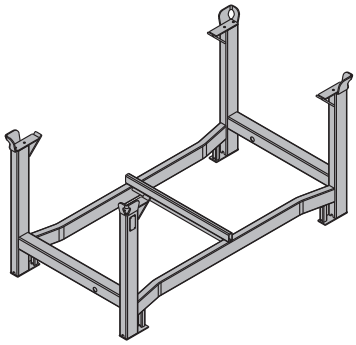
# Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport devices for long items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

The Bolt-on caster set B turns the stacking pallet into a fast and maneuverable transport trolley.

Follow the directions in the "Bolt-on caster set B" Operating Instructions!



| |
|---|
| Max. load: 1100 kg |
| Permitted imposed load: 5900 kg |

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- The rating plate must be attached and clearly legible

## Using Doka stacking pallets as storage units

**Max. n° of boxes on top of one another**

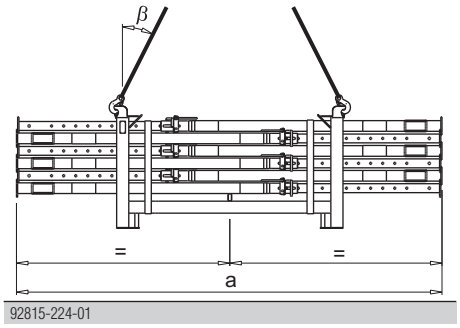
| Outdoors (on the site)<br>Floor gradient up to 3% | Indoors<br>Floor gradient up to 1% |
|---|---|
| 2 | 6 |
| It is not allowed to stack empty pallets on top of one another! | |

- **How to use with bolt-on caster set:**
  Always apply the fixing brake when the container is "parked".
  When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

## Using Doka stacking pallets as transport devices

### Resetting by crane

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g.: Doka 4-part chain 3.20m.
- Load the items centrically.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.
- When lifting stacking pallets to which Bolt-on caster sets B have been attached, you must also follow the directions in these Operating Instructions!
- Spread-angle β max. 30°!




| | a |
|---|---|
| Doka stacking pallet 1.55x0.85m | max. 4.0 m |
| Doka stacking pallet 1.20x0.80m | max. 3.0 m |

### Shifting boxes with the forklift or pallet stacking truck

- Load the items centrically.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.

# Doka accessory box

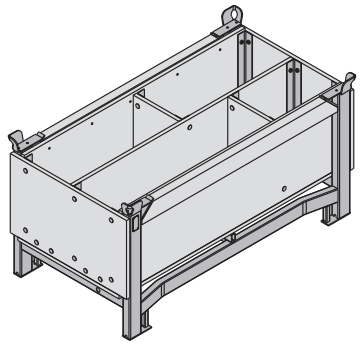
Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

This box is the tidy, easy-to-find way of storing and stacking all interconnection and form-tie components.

The Bolt-on caster set B turns the stacking pallet into a fast and maneuverable transport trolley.

Follow the directions in the "Bolt-on caster set B" Operating Instructions!



| |
|---|
| Max. load: 1000 kg |
| Permitted imposed load: 5530 kg |

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- The rating plate must be attached and clearly legible

## Using Doka accessory boxes as storage units

**Max. n° of boxes on top of one another**

| Outdoors (on the site) | Indoors |
|---|---|
| Floor gradient up to 3% | Floor gradient up to 1% |
| 3 | 6 |
| It is not allowed to stack empty pallets on top of one another! | |

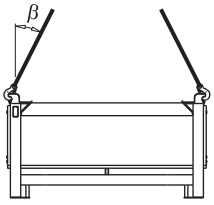
- **How to use with bolt-on caster set:** Always apply the fixing brake when the container is "parked".

  When Doka accessory boxes are stacked, the bottom box must NOT be one with a bolt-on caster set mounted to it.

## Using Doka accessory boxes as transport devices

### Resetting by crane

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain. (Do not exceed the permitted load capacity). e.g.: Doka 4-part chain 3.20m.
- When lifting stacking pallets to which Bolt-on caster sets B have been attached, you must also follow the directions in these Operating Instructions!
- Spread-angle β max. 30°!

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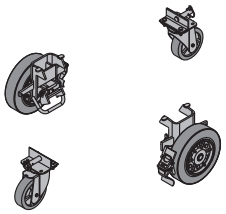
### Shifting boxes with the forklift or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

## Bolt-on caster set B

The Bolt-on caster set B turns the stacking pallet into a fast and maneuverable transport trolley.

Suitable for drive-through access openings > 90 cm.



The Bolt-on caster set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets

Follow the directions in the Operating Instructions!

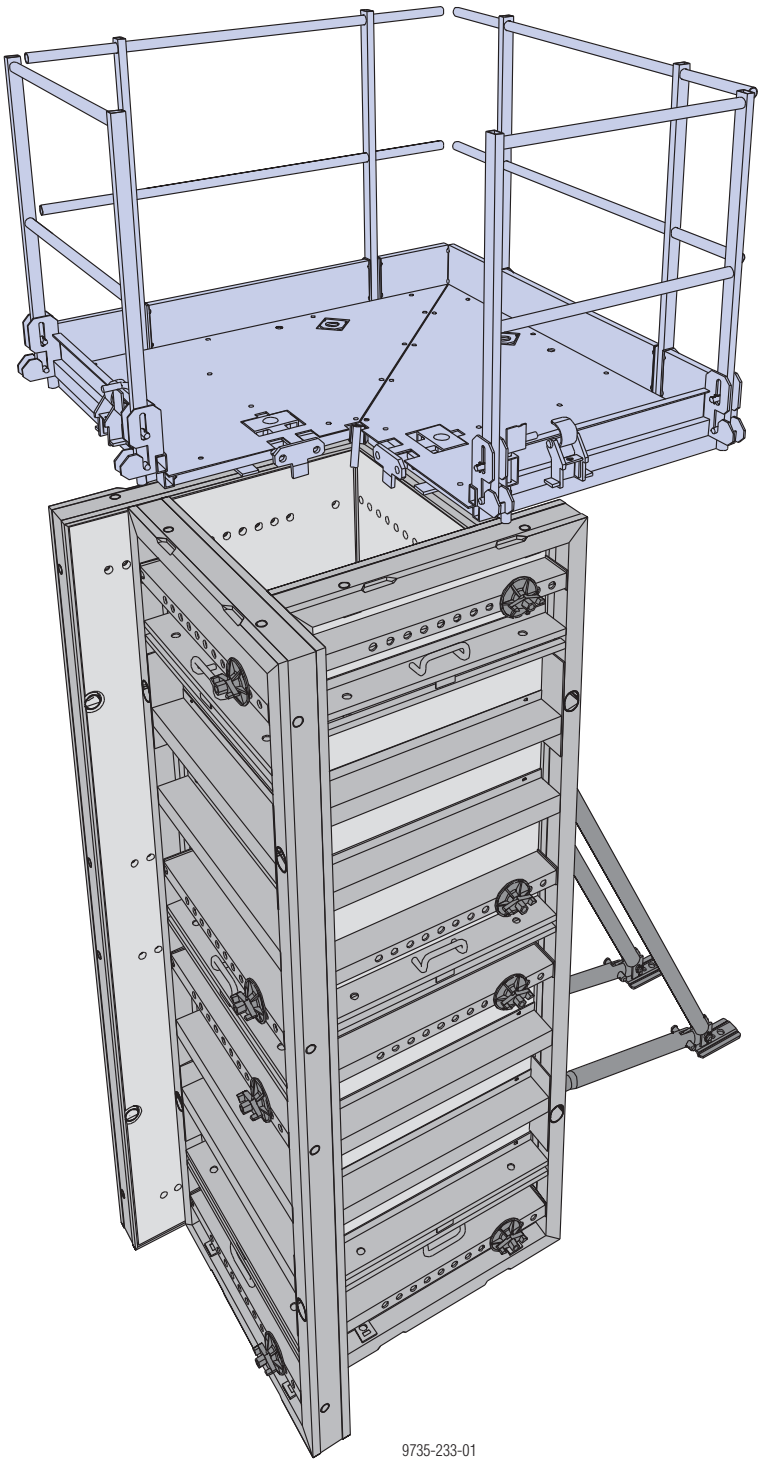
# Column formwork

The **Framax Xlife universal panels** permit flexible accommodation to column cross-sections of up to 42" x 42" (106.7 x 106.7 cm) in **2" (5.1 cm)** increments.

**Permitted fresh-concrete pressure:**
1,880 psf (90 kN/m²)

Where the concrete density is 150 pcf (25 kN/m³), this corresponds to a hydrostatic pour-height of 11'-10" (3.60 m).

However, dimensions of 30 cm, 45 cm, 60 cm, 75 cm and 90 cm can also be formed using **ordinary Framax Xlife panels and Framax outside corners** (permitted fresh-concrete pressure: 1,650 psf (80 kN/m²)).



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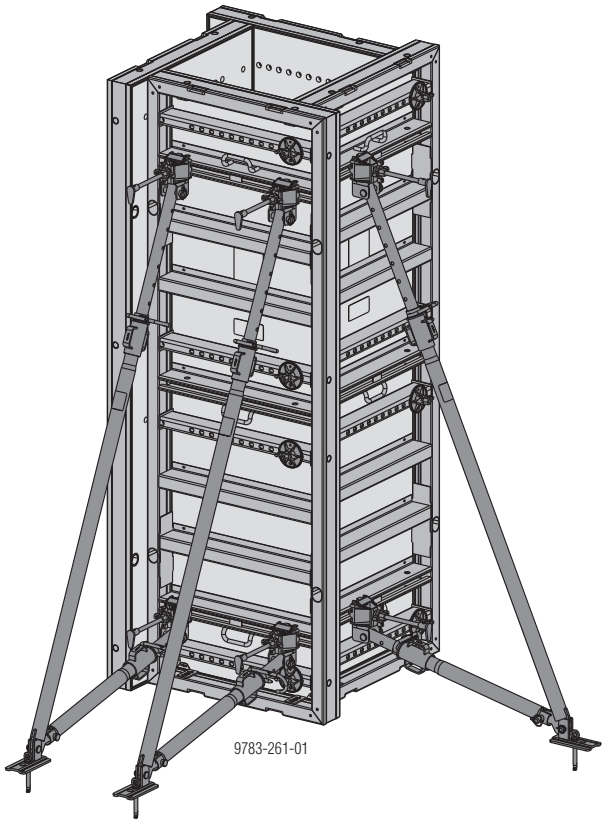
# Design of column formwork




- To achieve exact plumbing & aligning of the column formwork, the best arrangement of the panel struts is as shown above.
- Always attach panel struts to free-standing formwork halves to prevent them from falling over.

## Setting up and stripping the formwork

**Setting up:**

- ➤ Pre-assemble the formwork-halves flat on the ground.
- ➤ Secure the first formwork-half with panel struts before detaching it from the crane.
- ➤ Join the second formwork-half to the first half of the formwork, then detach it from the crane.

**Stripping:**

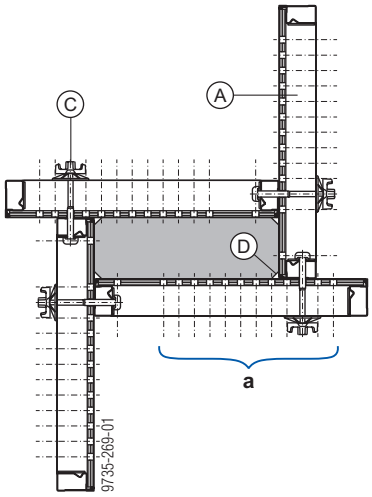
- ➤ First attach the formwork-half that is without panel struts to the crane. Then undo the connection between the formwork-halves, hoist the second formwork-half out of the way and set it down flat for intermediate storage.
- ➤ Attach the formwork-half that is with panel struts to the crane. Take out the ground anchors of the panel struts and reposition this half of the formwork.

# with Framax Xlife universal panels

The practical 2" (5.1 cm) hole-grid is ideal for forming columns. **Cross-sections of up to 42" x 42" (106.7 x 106.7 cm).** By combining panels with heights of 2.70 m, 1.35 m and 0.90 m, a **height grid of 45 cm** is possible.

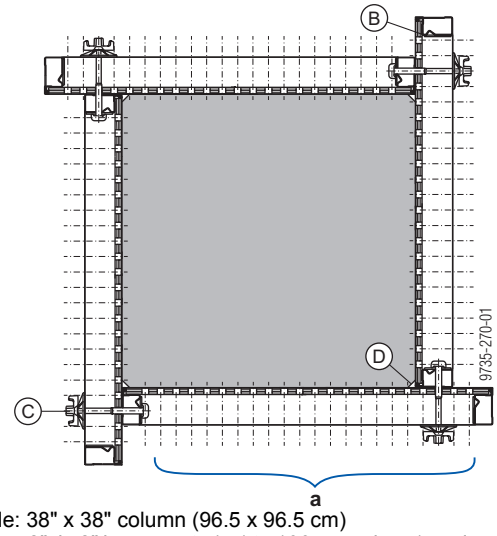
Seal off the unused holes in the form-facing of the Universal panels with **Framax plugs R24**.

## Framax Xlife universal panel 0.90m




Example: 8" x 24" column (20 x 61 cm)
a ... 6" to 28", in 2" increments (15 to 71 cm, in 5.1 cm increments)

## Framax Xlife universal panel 1.22m

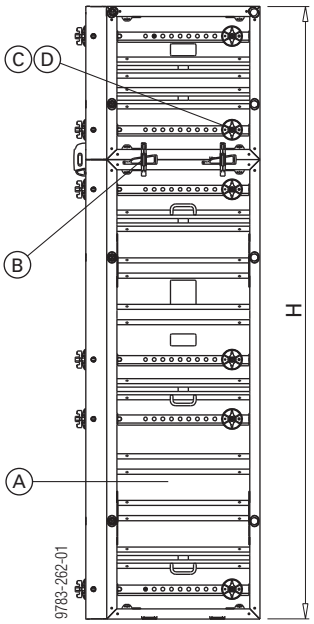



Example: 38" x 38" column (96.5 x 96.5 cm)
a ... 2" to 42", in 2" increments (5.1 to 106.7 cm, in 5.1 cm increments)

| | |
|---|---|
| **A** | Framax S Xlife universal panel 0.90m |
| **B** | Framax S Xlife universal panel 1.22m |
| **C** | Framax universal fixing bolt + Super-plate 15.0 |
| **D** | Framax frontal triangular ledge |

**Combining the two widths of panel:**
Large rectangular cross-sections can be economically formed by combining the two widths of panel.

# Materials schedule:



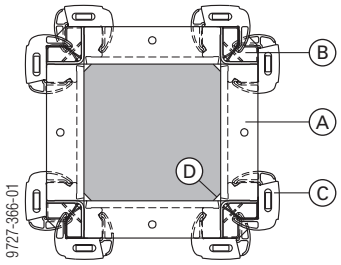

| Formwork height **(H)** | Universal panel **(A)** | | | Quick-acting clamp RU **(B)** | Universal fixing bolt **(C)** | Super-plate 15.0 **(D)** |
|---|---|---|---|---|---|---|
| | 2.70m | 1.35m | 0.90m | | | |
| 3'-0" (0.90 m) | | | 4 | | 8 | 8 |
| 4'-5" (1.35 m) | | 4 | | | 8 | 8 |
| 5'-10" (1.80 m) | | | 8 | 8 | 16 | 16 |
| 7'-4" (2.25 m) | | 4 | 4 | 8 | 16 | 16 |
| 8'-10" (2.70 m) | 4 | | | | 16 | 16 |
| 10'-4" (3.15 m) | | 4 | 8 | 16 | 24 | 24 |
| 11'-10" (3.60 m) | 4 | | 4 | 8 | 24 | 24 |
| 13'-3" (4.05 m) | 4 | 4 | | 8 | 24 | 24 |
| 14'-9" (4.50 m) | 4 | | 8 | 16 | 32 | 32 |
| 16'-3" (4.95 m) | 4 | 4 | 4 | 16 | 32 | 32 |
| 17'-9" (5.40 m) | 8 | | | 8 | 32 | 32 |

Table gives number of items needed

# with Framax outside corners and Framax Xlife panels

Dimensions of **30 cm, 45 cm, 60 cm, 75 cm** and **90 cm** can also be formed using **Framax outside corners** and ordinary **Framax Xlife panels**.

**Permitted fresh-concrete pressure:**
1,650 psf (80 kN/m²)

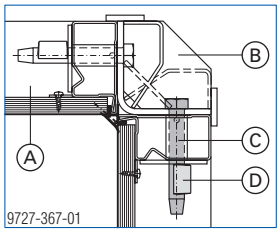



**A** Framax S Xlife panel (max. 60cm)
**B** Framax outside corner
**C** Framax quick-acting clamp RU
**D** Triangular ledge

For columns where one or both sides of the cross-section measures either **75 cm or 90 cm**, **wedge bolts** and **tensioning wedges** must be used instead of the quick-acting clamps.

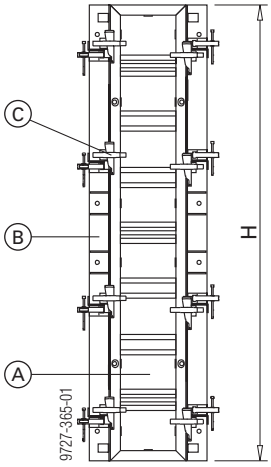
Do not oil or grease wedge-clamped joints.

**Framax wedge bolt RA 7.5**
Permitted tensile force in the cross borehole of the Framax S Xlife panel: 5.6 kip (25.0 kN)




**A** Framax S Xlife panel 0.75m or 0.90m
**B** Framax outside corner
**C** Framax wedge bolt RA 7.5
**D** Framax tensioning wedge R

## Materials schedule:



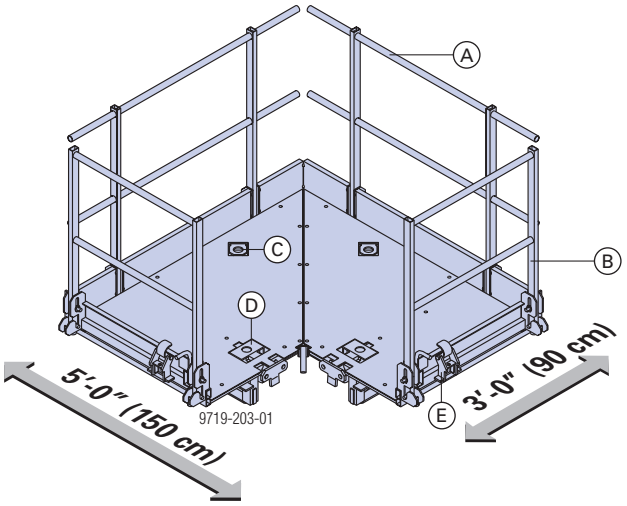

Example: Framax outside corners 2.70m with Framax Xlife panels 0.45x2.70m

| Panel height **(H)** | Framax Xlife panel **(A)** | | Framax outside corner **(B)** | | Quick-acting clamp RU or Wedge bolt with tensioning wedge **(C)** |
|---|---|---|---|---|---|
| | 2.70m | 1.35m | 2.70m | 1.35m | |
| 1.35m | | 4 | | 4 | 16 |
| 2.70m | 4 | | 4 | | 32 |

Table gives number of items needed

# Doka column formwork platform 150/90cm

## Product description




| | |
|---|---|
| **A** | Rear railing |
| **B** | Side railing |
| **C** | Rear hoisting point |
| **D** | Safety hook (blue) = front hoisting point |
| **E** | Extra hoisting point (red) in stand-by position |

**Permitted service load:**

- to **OSHA 1926**, Subpart L:
  **30 psf (150 kg/m²)**
- to **CAN/CSA S269.2** - "Access scaffolding for Construction Purpose" (Light duty scaffold):
  **25 psf (120 kg/m²)**

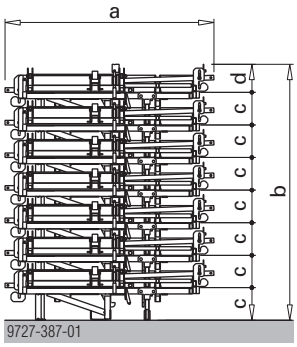
The main features:

- This pre-assembled, ready-to-use platform ensures convenient and safe working on column formworks. It can be used on columns of any cross-section.
  - with Framax Xlife: 10" x 10" to 42" x 42" (25.4 x 25.4 cm to 106.7 x 106.7 cm)
- The slinging points recessed into the planking make it a quick and easy job to lift the platform by crane. Only one column formwork platform can be used on each column.
- Because the platform can be relocated so quickly, it can "migrate" from one formwork to the next during concreting. This means that one platform is sufficient to serve several column formworks.
- The practical swing-out side railings make it easy to get on or off the platform. Both the side railings can be fixed in either the open or closed position.

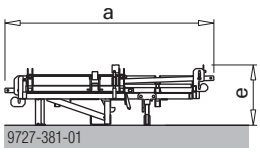
## Transporting, stacking and storing

The Doka column-formwork platforms are pre-assembled and are easy to transport and store in the folded-down position – it is not possible for them to slide sideways.

Stack of 7 column formwork platforms




Single folded-down platform




a ... 6' (183 cm)
b ... 7'-5" (225 cm)
c ... 11 1/4" (28.6 cm)
d ... 9 3/4" (24.8 cm)
e ... 21" (53 cm)

## How to erect

➤ Tip up the side railings.

The railings lock into place automatically.

➤ Tip up the rear railings.

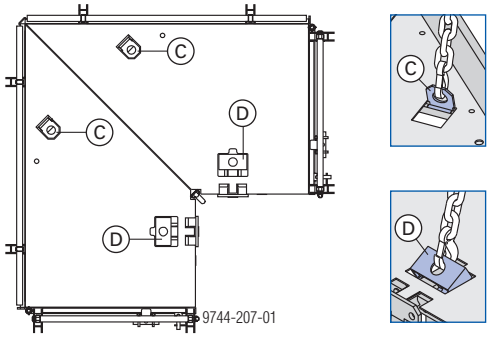
The railings lock into place automatically.

The column formwork platform is now ready for use.

**Note:**
When folding the platform back down, first fold down the rear railings, and then the side ones.

## Relocating the platform

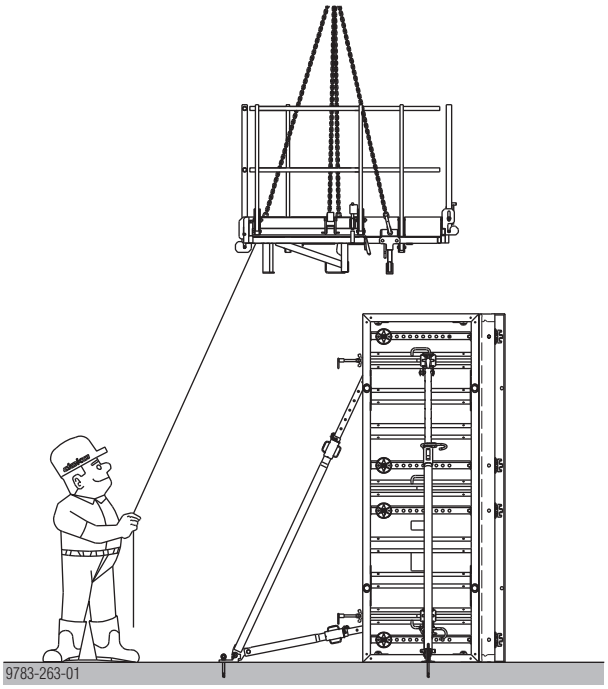
➤ Attach the crane to the points shown.




**C** Rear hoisting point
**D** Front hoisting point

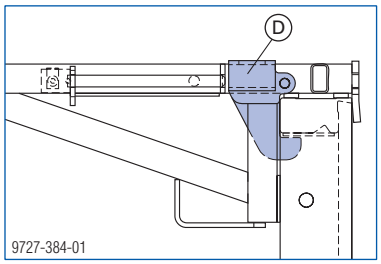
Red extra hoisting point in stand-by position.

➤ Hook the column formwork platform onto the formwork.



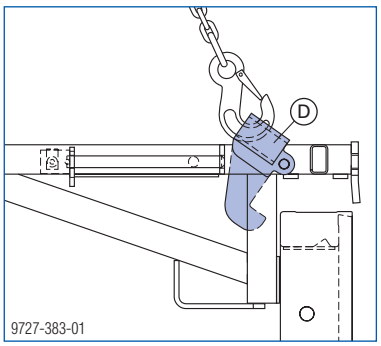

Using tag-lines makes it much easier to hang the platform exactly into place.

➤ After the column formwork platform has been hung into place on the formwork, detach the four-part lifting tackle.




The safety hook **(D)** drops down into its starting position and automatically secures the platform against accidental lift-out.

➤ When the platform is lifted, the four-part lifting chain acts on the safety hook **(D)** and the platform automatically unlocks.



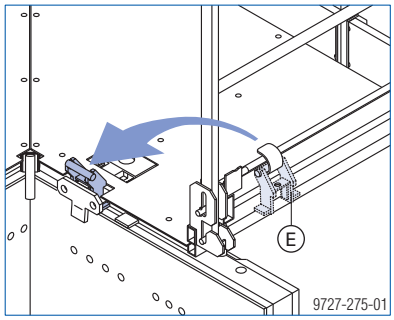
## Lifting the formwork and platform in one piece

To save crane time, the Doka column formwork platform can also be repositioned together with the formwork:

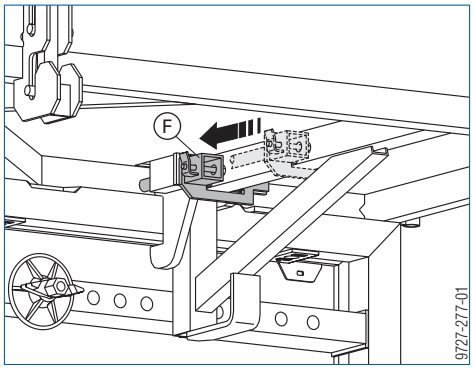
⚠
- ➤ Only ever lift and reposition one formwork-half at a time.
- ➤ Max. heights of formwork that can be repositioned together with the platform:
  - 26'-7" (8.10m) with Universal panels 0.90m
  - 17'-9" (5.40m) with Universal panels 1.22m

➤ Hang the platform into place on the formwork (proceed as in "Relocating the platform").

➤ Move the extra hoisting point **(E)** from the stand-by position to the service position. Right position = inclined forward towards formwork.



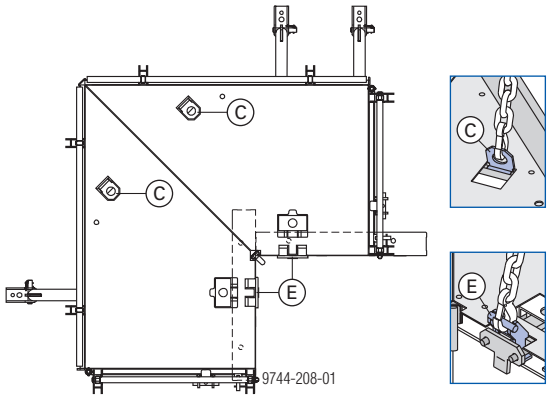

➤ Fix the extra hoisting point with the slide bolt **(F)** on the underside of the platform.




Make sure that the slide bolt engages in the front position.

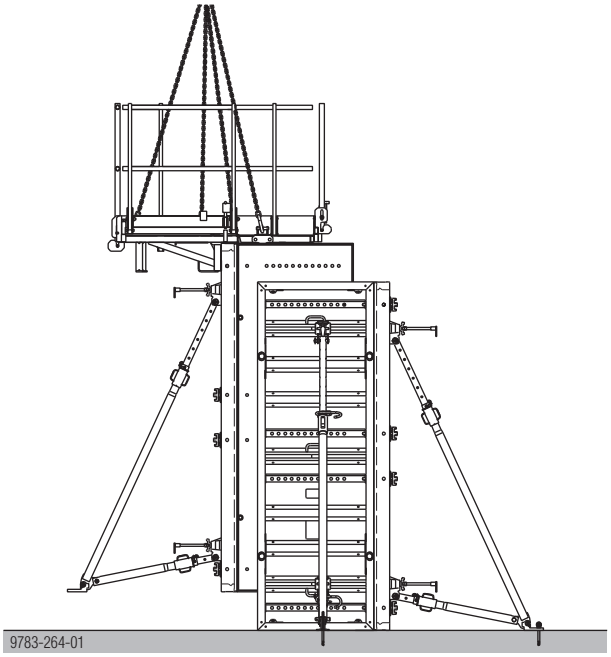
➤ Use additional panel struts to secure the formwork-half that has no platform mounted on it.

➤ Attach the crane to the points shown.




**C** Rear hoisting point

**E** Extra hoisting point

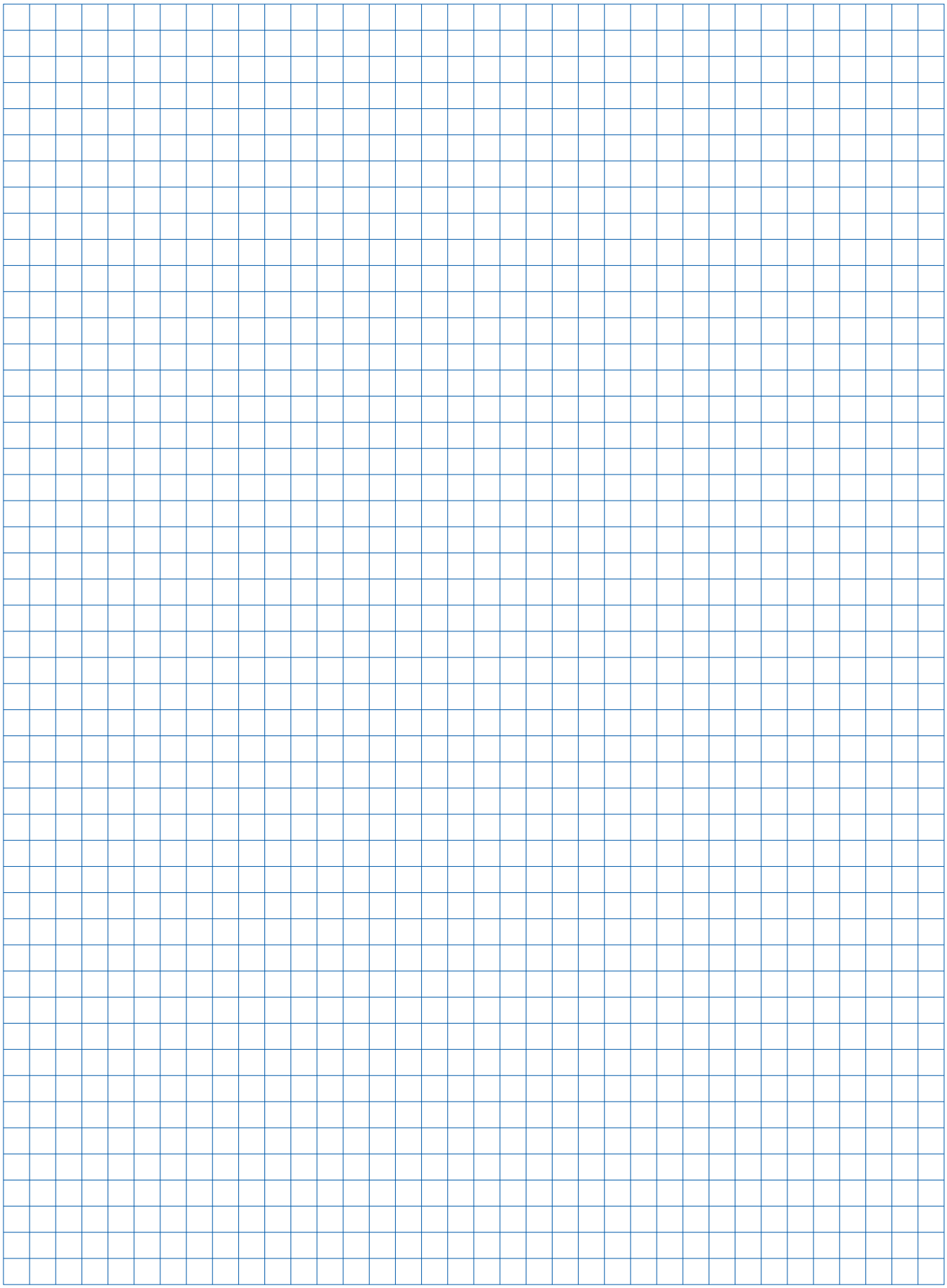



The platform can stay attached to the formwork throughout this entire operation.

### Separating the platform from the formwork

➤ Fix the slide bolt **(F)** back in the rear position and move the extra hoisting point into the stand-by position.

➤ Attach the crane to the points shown in "Relocating the platform".



# Circular formwork

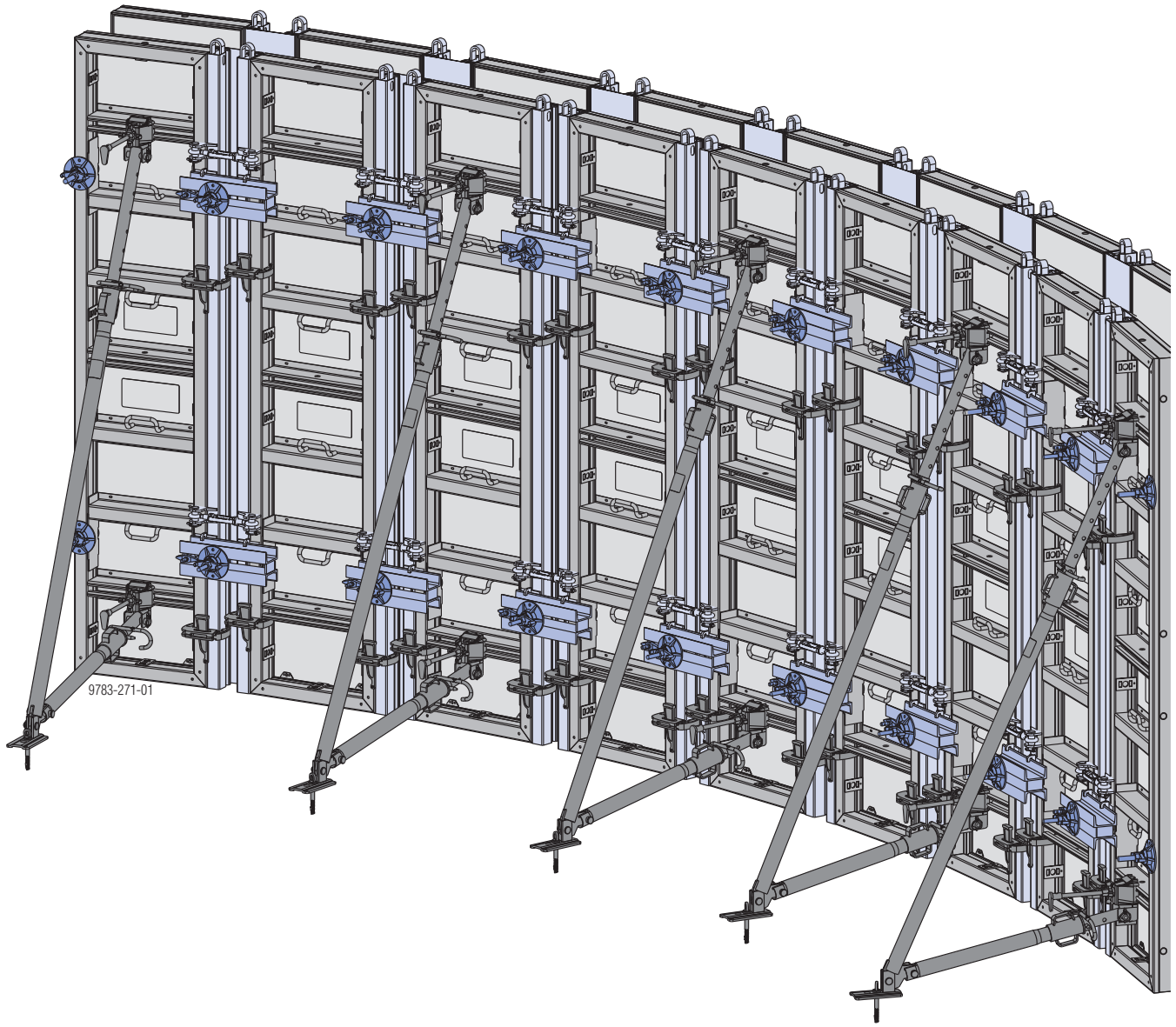
**The quick way to form "in the round" – the Framax circular forming plates will get your framed formwork "around" any curve!**

With the Framax circular forming plates and the panels of the Framax Xlife framed formwork system, "circular" (i.e. polygonal) structures can be formed.

A particularly cost-cutting factor in practice is the fact that you can use your existing Framax Xlife panels and all accessories such as panel struts and pouring platforms from the Framax Xlife range.

This makes circular forming of curved concrete structures with Framax circular forming plates from Doka **universal, economical and fast**.

**Permitted fresh-concrete pressure:**
1,000 psf (50 kN/m²)

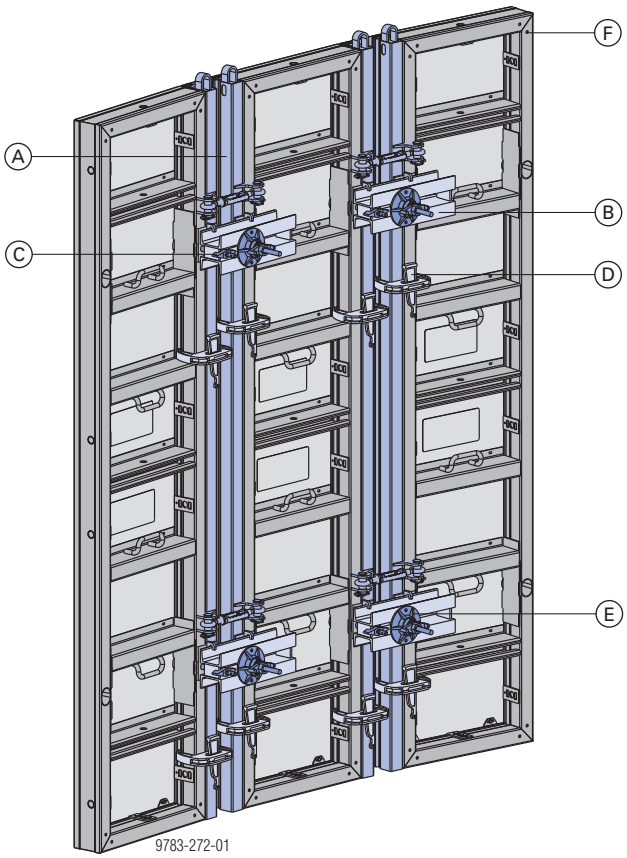


# Design of the circular formwork

By combining the Framax circular forming plates with the Framax Xlife panels, round structures – of any radius – can be formed.

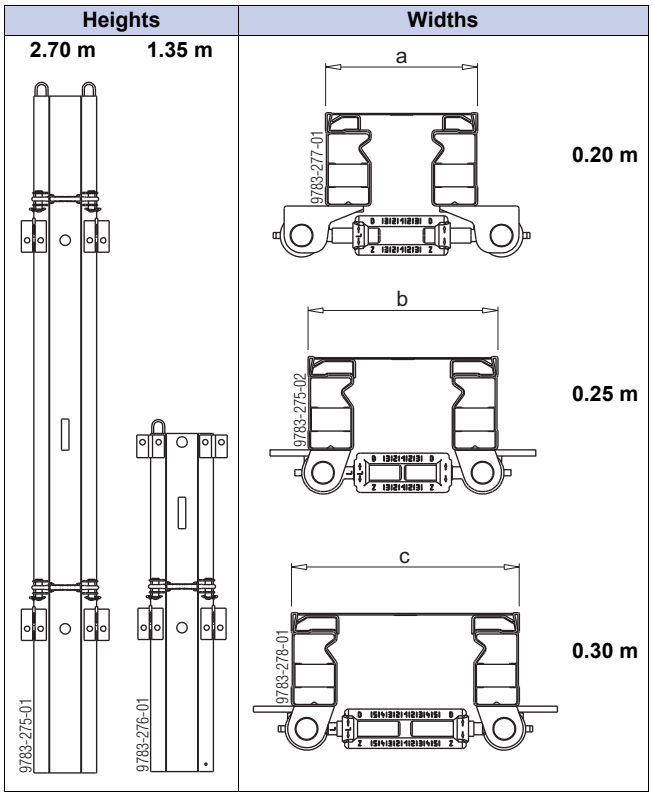
**Minimum inside radius: 5'-11" (1.80 m)**

In the same way as with the wall formwork, all that is needed to connect the Framax circular forming plates to the Framax Xlife panels is the **Quick-acting clamp RU** – and a blow of the hammer.




| | |
|---|---|
| **A** | Framax S circular forming plate |
| **B** | Framax S steel waling RD 0.40m |
| **C** | Framax clamping bolt 4-8cm + Wing-nut 15.0 |
| **D** | Framax quick-acting clamp RU |
| **E** | Taper tie + Super-plate 20.0 B |
| **F** | Framax S Xlife panel |

## Framax circular forming plates



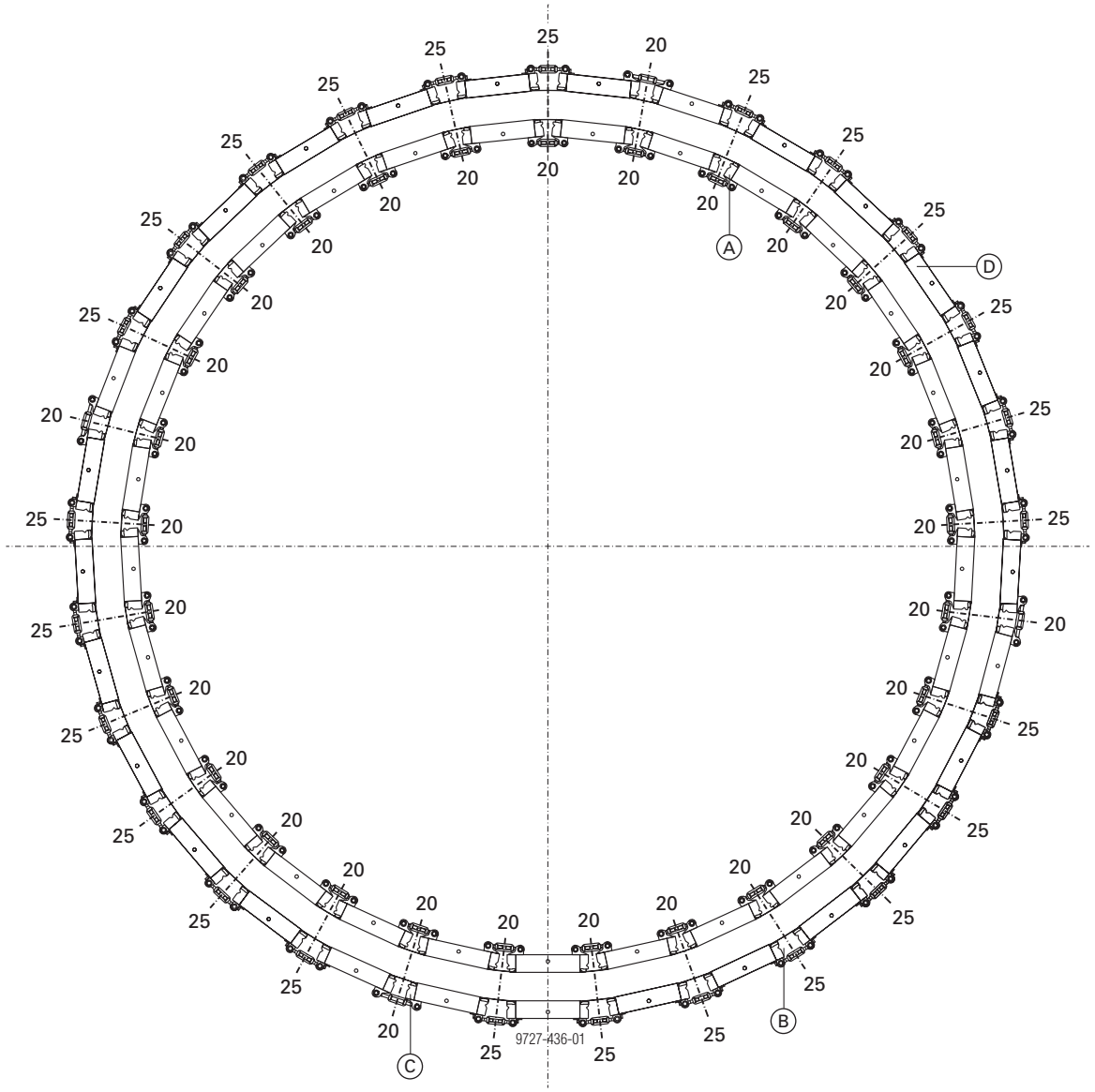

a ... 7 $^{7}/_{8}$" (20 cm)
b ... 9 $^{7}/_{8}$" (25 cm)
c ... 11 $^{3}/_{4}$" (30 cm)

Using the different widths of circular forming plate:

- **0.20 m**
  - Inside circular forming plate
  - Outside circular forming plate (for length adjustment)
- **0.25 m**
  - Outside circular forming plate
- **0.30 m**
  - Outside circular forming plate

# Example of formwork

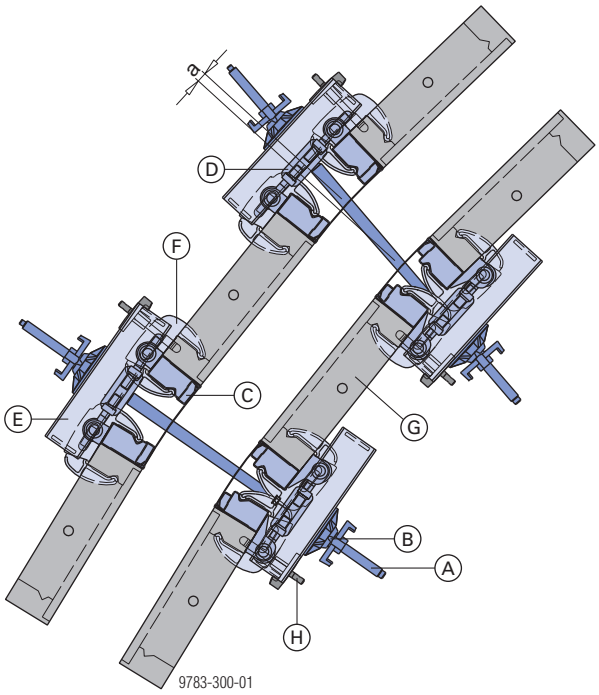
- Type of structure: Circular tank
- Inside radius of structure: 9’-10" (3.00 m)
- Wall thickness: 8" (0.20 m)




Simplified representation, without details of form-ties or panel struts.

| | |
|---|---|
| **A** | Framax S circular forming plate 0.20m (for the inside formwork) |
| **B** | Framax S circular forming plate 0.25m (for the outside formwork) |
| **C** | Framax S circular forming plate 0.20m (for length adjustment, distribute evenly around circumference) |
| **D** | Framax S Xlife panel 0.45m (**Note:** same-sized panels are always used both inside and out.) |

# Tying the circular forming plates




a ... maximum tie-rod displacement = ± 1" (2.5 cm)

| | |
|---|---|
| **A** | Taper tie |
| **B** | Super-plate 20.0 B |
| **C** | Framax S circular forming plate |
| **D** | Turnbuckle |
| **E** | Framax S steel waling RD 0.40m |
| **F** | Framax quick-acting clamp RU |
| **G** | Framax S Xlife panel |
| **H** | Framax clamping bolt 4-8cm + Wing-nut 15.0 |

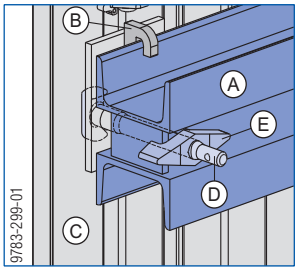
If the tie-rod displacement is any bigger than this, move up to the next size of circular forming plate.

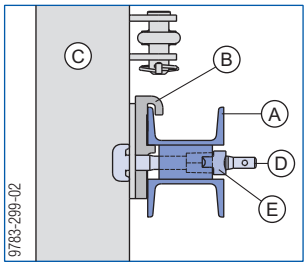
When adjusting the Framax circular forming plates, ensure that the top and bottom turnbuckle are turned uniformly!

## Fixing the Steel waling RD 0.40m

**Note:**

The Steel waling RD 0.40m must be mounted to the circular forming plates before the Framax panels are attached to them.




| | |
|---|---|
| **A** | Framax S steel waling RD 0.40m |
| **B** | Support and retainer for Steel waling RD 0.40m |
| **C** | Framax S circular forming plate |
| **D** | Framax clamping bolt 4-8cm |
| **E** | Wing nut |

# Closing the full-circle formwork

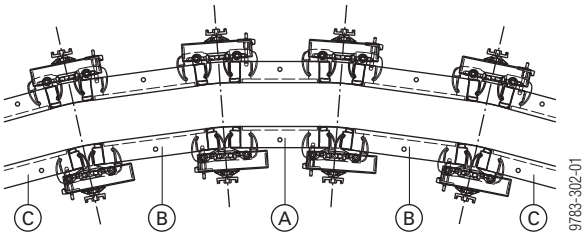
The remaining areas for closing a full circle can be formed in a number of different ways.

☞ Around the perimeter, use panels of equal width wherever possible.

- To keep the load transferred via the Steel waling RD 0.40m as uniform as possible, adjacent panels may not have bigger width differences than those of the standard width grid.
- This also applies to transition zones to straight walls, and to bulkheads.

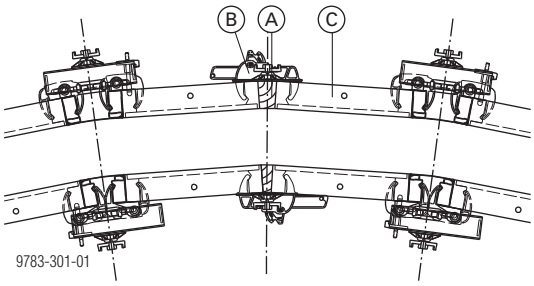
☞ With circular formwork, it is particularly important to ensure uniform pouring.

## Filler with Framax Xlife panel

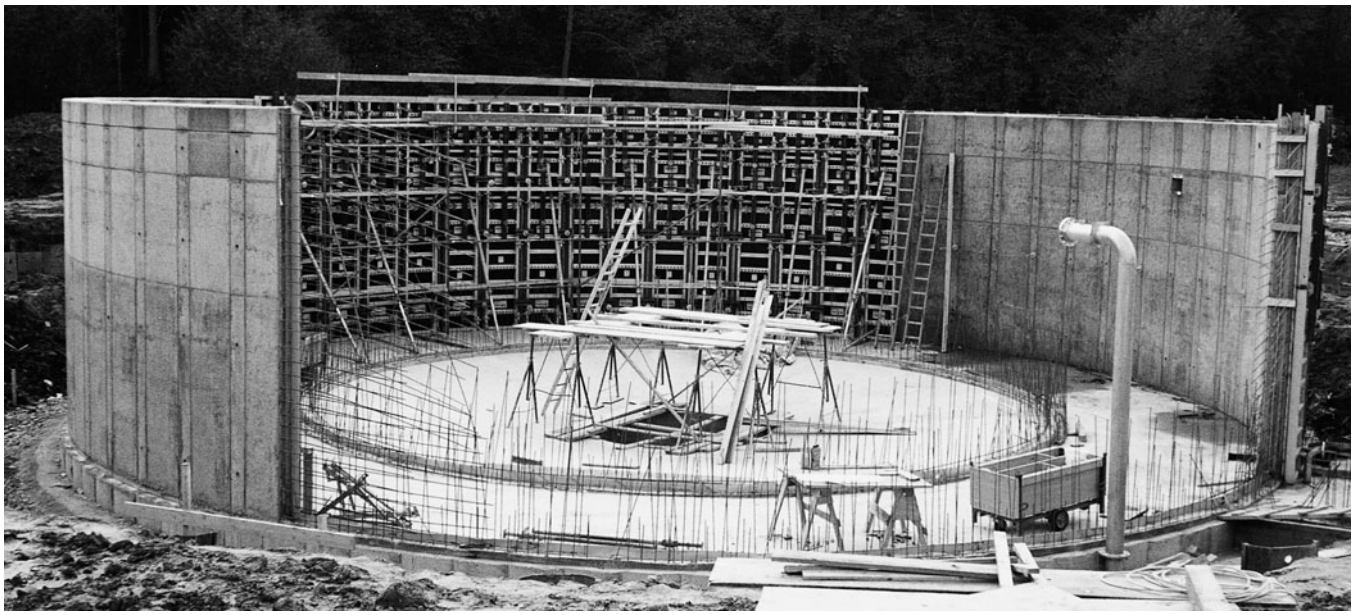



**A** Framax S Xlife panel e.g. 0.45m
**B** Framax S Xlife panel e.g. 0.60m
**C** Framax S Xlife panel e.g. 0.90m

## Fillers with wedged timbers



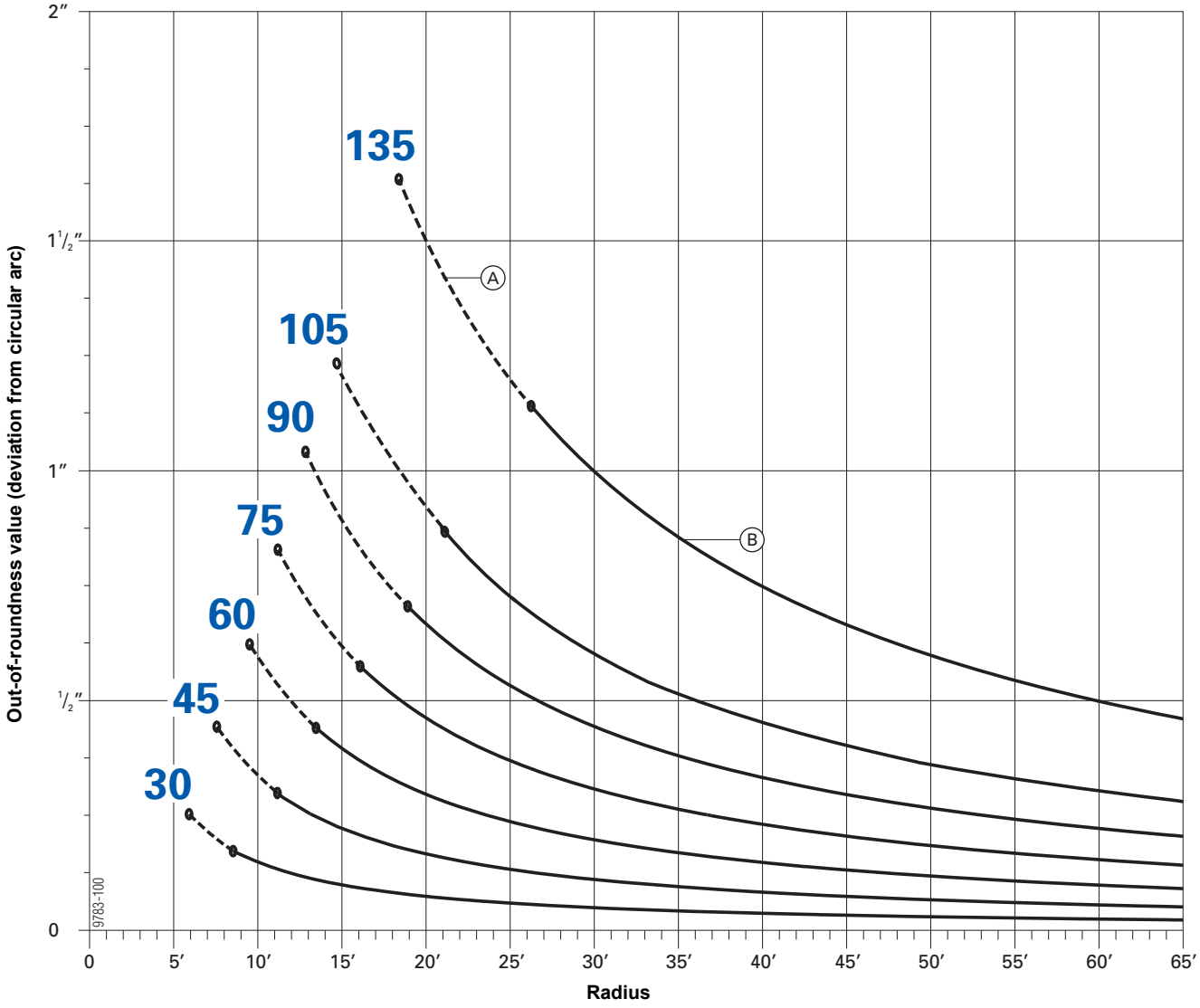

**A** Wedged timber
**B** Framax multi-function clamp
**C** Framax S Xlife panel



# Determining the max. panel width - (inch)

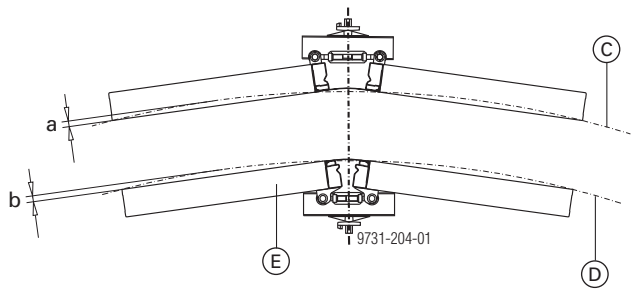
## Radius / out-of-roundness diagram for the various widths of panel

The radius / out-of-roundness diagram is for determining the max. panel width as a function of the radius and the permitted deviations from the circular arc.




**A** Minimum wall thickness = 8"

**B** Minimum wall thickness = 6"




a ... Outside out-of-roundness value

b ... Inside out-of-roundness value

**C** Ideal circular arc (outside radius)

**D** Ideal circular arc (inside radius)

**E** Framax Xlife panel

**Example:**

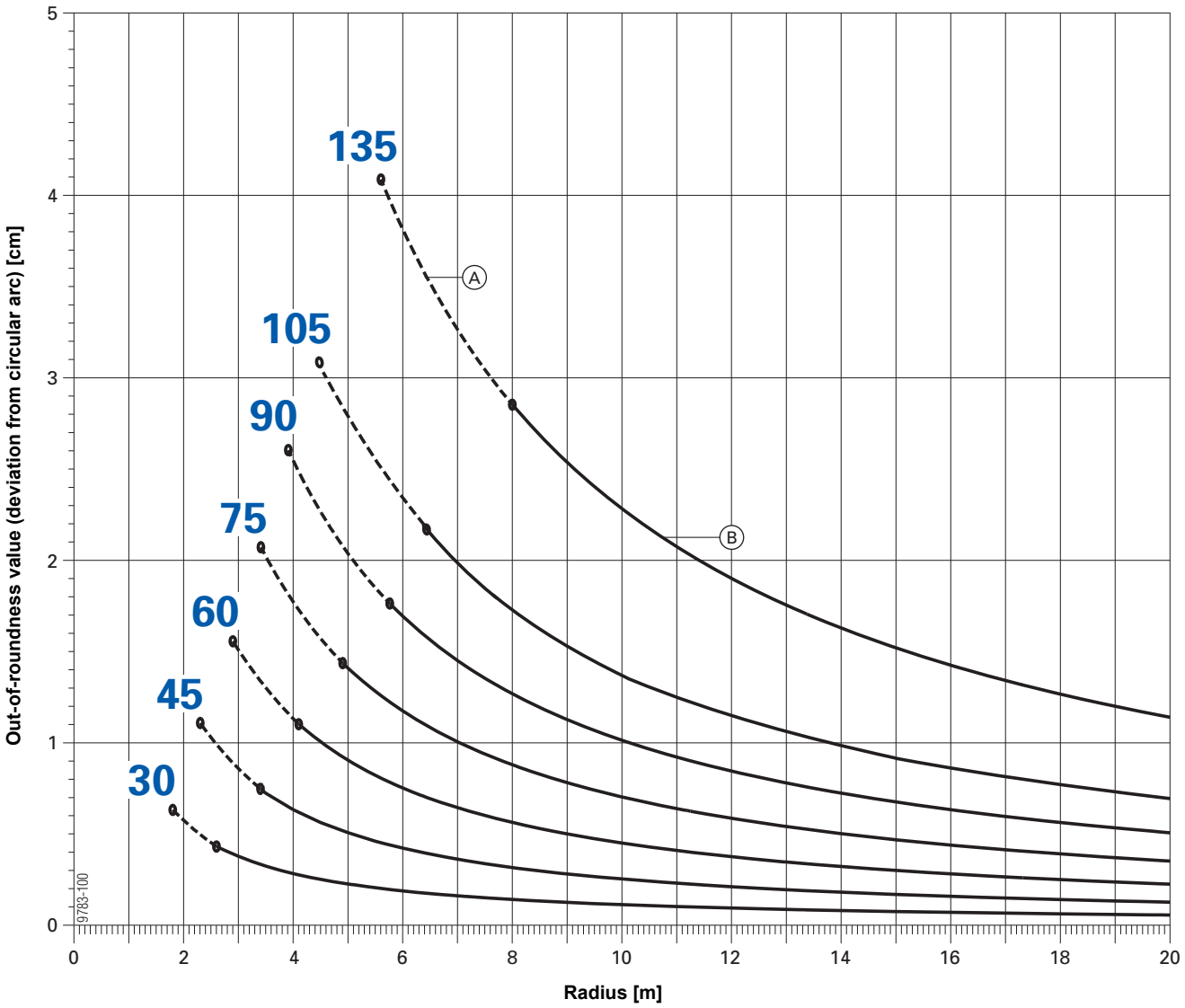
- Radius: 20’-0"
- Permitted deviation from circular arc: $^{3}/_{8}$"

=> max. width of panel: **60 cm**

# Determining the max. panel width - (metric)

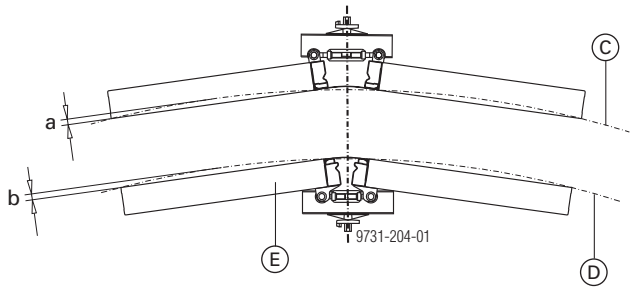
## Radius / out-of-roundness diagram for the various widths of panel

The radius / out-of-roundness diagram is for determining the max. panel width as a function of the radius and the permitted deviations from the circular arc.




**A** Minimum wall thickness = 20 cm

**B** Minimum wall thickness = 15 cm




a ... Outside out-of-roundness value

b ... Inside out-of-roundness value

**C** Ideal circular arc (outside radius)

**D** Ideal circular arc (inside radius)

**E** Framax Xlife panel

**Example:**

- Radius: 6.0 m
- Permitted deviation from circular arc: 1.0 cm

=> max. width of panel: **60 cm**

# Determining the best distribution of the panels - (inch)

| | Example |
|---|---|

## Key data of structure:

| | |
|---|---|
| Inside radius: | 19’ (228") |
| Outside radius: | 19’-8" (236") |
| Permitted deviation from circular arc: | $^{3}/_{8}$" |
| Length of concreting section: | 29’-10" (358"), = 1/4 of the inside circumference |

## Panel width:

| | |
|---|---|
| ● Determine the max. panel width from the radius / out-of-roundness diagram, with reference to the radius of the structure and the permitted deviation from the circular arc. | **Panel width = 60 cm** |

## Width of circular forming plates for inside formwork:

| | |
|---|---|
| ● As a general rule, use the Circular forming plate 0.20m with the inside formwork. | **Width of circular forming plate = 20 cm** |

## Number of circular forming plates and panels for inside formwork:

| | |
|---|---|
| ● ( ( length of concreting section x 2.54 ) - panel width ) ÷ ( panel width + 20 ) = ... | ( ( 358 x 2.54 ) - 60 ) ÷ ( 60 + 20 ) = 10.61 |
| ● Number of circular forming plates = Rounded-up result | **Number of circular forming plates = 11** |
| ● Number of panels = Number of circular forming plates + 1 | **Number of panels = 12** |

## Widths of circular forming plates, and numbers needed for outside formwork:

| | |
|---|---|
| ● ( outside radius ÷ inside radius ) x ( panel width + 20 ) - panel width = ... | ( 236 ÷ 228 ) x ( 60 + 20 ) - 60 = 22.80 |
| ● Select the next smaller circular forming plate referred to as a "Type A" circular forming plate. | **Width of "Type A" circular forming plate = 20 cm** |
| ● Calculate the difference. | **Difference =** ( 22.80 - 20 ) = **2.80** |
| ● Number of Circular forming plates x ( 1 - ( difference ÷ 5 ) ) = ... | 11 x ( 1 - ( 2.80 ÷ 5 ) ) = 4.84 |
| ● Number of "Type A" circular forming plates = Rounded-up result | **Number of "Type A" circular forming plates = 5** |
| ● Number of "Type B" circular forming plates = Number of circular forming plates – number of "Type A" circular forming plates" = ... | **Number of "Type B" circular forming plates =** 11 - 5 = **6** |
| ● Select the next larger circular forming plate to be the "Type B" circular forming plate. | **Width of "Type B" circular forming plate = 25 cm** |

# Determining the best distribution of the panels - (metric)

| | **Example** |
|---|---|

## Key data of structure:

| | |
|---|---|
| Inside radius [cm]: | 580 |
| Outside radius [cm]: | 600 |
| Permitted deviation from circular arc [cm]: | 1.0 |
| Length of concreting section [cm]: | 911 (1/4 of the inside circumference) |

## Panel width:

| | |
|---|---|
| ● Determine the max. panel width from the radius / out-of-roundness diagram, with reference to the radius of the structure and the permitted deviation from the circular arc. | **Panel width = 60 cm** |

## Width of circular forming plates for inside formwork:

| | |
|---|---|
| ● As a general rule, use the Circular forming plate 0.20m with the inside formwork. | **Width of circular forming plate = 20 cm** |

## Number of circular forming plates and panels for inside formwork:

| | |
|---|---|
| ● ( length of concreting section - panel width ) ÷ ( panel width + 20 ) = ... | ( 911 - 60 ) ÷ ( 60 + 20 ) = 10.64 |
| ● Number of circular forming plates = Rounded-up result | **Number of circular forming plates = 11** |
| ● Number of panels = Number of circular forming plates + 1 | **Number of panels = 12** |

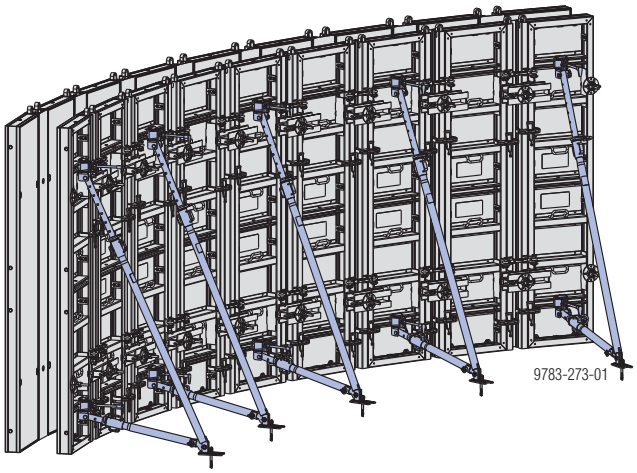
## Widths of circular forming plates, and numbers needed for outside formwork:

| | |
|---|---|
| ● ( outside radius ÷ inside radius ) x ( panel width + 20 ) - panel width = ... | ( 600 ÷ 580 ) x ( 60 + 20 ) - 60 = 22.76 cm |
| ● Select the next smaller circular forming plate referred to as a "Type A" circular forming plate. | **Width of "Type A" circular forming plate = 20 cm** |
| ● Calculate the difference. | **Difference =** ( 22.76 cm - 20 cm ) = **2.76 cm** |
| ● Number of Circular forming plates x ( 1 - ( difference ÷ 5 ) ) = ... | 11 x ( 1 - ( 2.76 ÷ 5 ) ) = 4.93 |
| ● Number of "Type A" circular forming plates = Rounded-up result | **Number of "Type A" circular forming plates = 5** |
| ● Number of "Type B" circular forming plates = Number of circular forming plates – number of "Type A" circular forming plates" = ... | **Number of "Type B" circular forming plates =** 11 - 5 = **6** |
| ● Select the next larger circular forming plate to be the "Type B" circular forming plate. | **Width of "Type B" circular forming plate = 25 cm** |

# Erecting and plumbing / Pouring platform / Resetting

## Erecting and plumbing

**Panel struts** ensure that the formwork remains stable against wind loads, and make it easier to plumb and align the formwork




**Important note:**

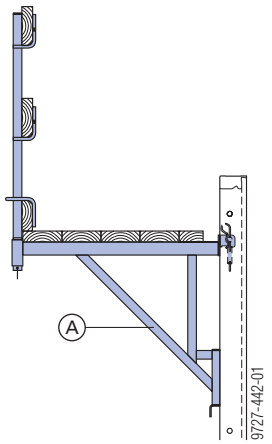
The formwork gangs must be securely braced in **every** phase of the construction work!

Observe all applicable safety rules!

For more information, please see "Plumbing accessories".

## Pouring platform

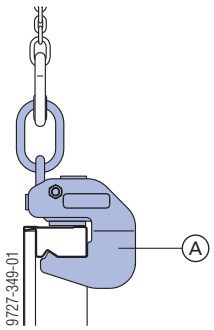
The **Framax brackets 90 (A)** can be used to make a universal pouring platform.




For more information, see "Pouring-platforms with single brackets".

## Resetting

Thanks to the spindle-lock, the formwork can be moved with the **Framax lifting hook (A)** even when assembled in a curved configuration.




- The maximum size of the unit to be lifted will depend - among other things - on the radius that has been set.
- When moving large gang-forms, ensure that these are sufficiently stiffened.
- Prevent oblique pull, by using long transfer cables (spread-angle β: max. 30°).
- Check that the slip-out guard of the Framax lifting hook has engaged!

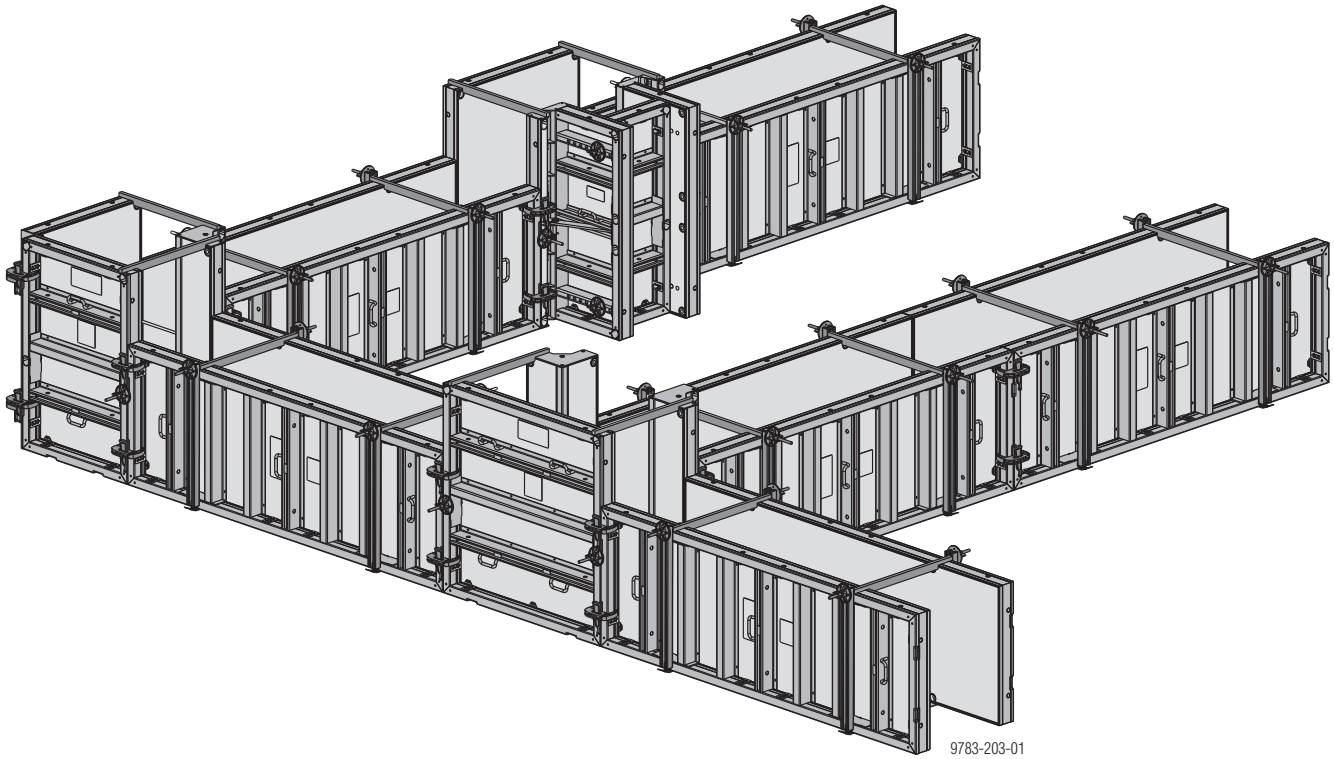
For more information, see "Resetting by crane".

Follow the directions in the Operating Instructions!

# Footing and grade beam formwork

**The Framax Xlife panels can also be used for footings and grade beams.**

This is particularly advantageous where it is intended to continue forming (i.e. the walls) using the same panels. Footings can quickly be formed with any of the panels, with the panels either upright or horizontal. Quick-acting clamps and a blow with the hammer are all it takes to join the panels. Fillers and corners are solved just as simply as in "normal" walls. A range of practical accessories makes the work very much easier.



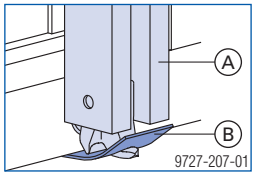
# Design of the footing and grade beam formwork

## Horizontal panels

### Tying the panels

- **at top:**
  - with Tie-rod 15.0mm and Super-plate 15.0
  - or Coil rod 3/4" with Anchor plate 3/4" and Wing nut 3/4"
- **at bottom:** with Framax foundation clamp and Doka perforated tape

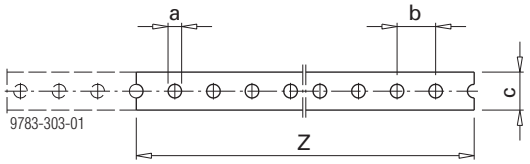
In this way, all wall thicknesses can be formed, in a 2" or 5 cm grid.




**A** Framax foundation clamp
**B** Doka perforated tape (expendable)

The **permitted load** for a wall-tie using a Framax foundation clamp and Doka perforated tape is **2,700 lbs (12 kN)**.

#### Doka perforated tape




Z ... Length of tape cut off roll: Wall thickness + 15 3/4" (40 cm)

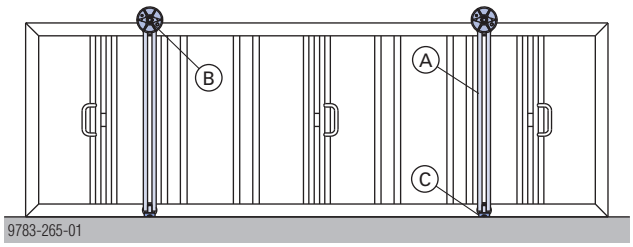
| | a | b | c |
|---|---|---|---|
| Doka perforated tape S 2" 25m | 3/4" | 2" | 2" |
| Doka perforated tape 50x2.0mm 25m | 18 mm | 5 cm | 5 cm |

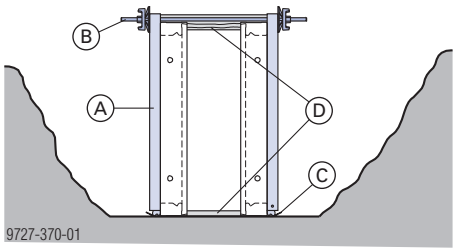
### For pour heights of up to 0.90 m (2'-11 3/8")

With panels of up to 0.90 m in width, the foundation clamp allows you to tie the panels above the concrete.

| Foundation clamps |
|---|
| 2 per panel |

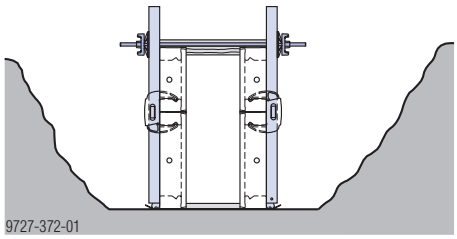
#### 0.90x2.70m panel




**A** Framax foundation clamp
**B** Form-tie system 15.0mm or Coil rod system 3/4"
**C** Doka perforated tape
**D** Wooden spacer

#### 0.45x2.70m panel + 0.30x2.70m panel



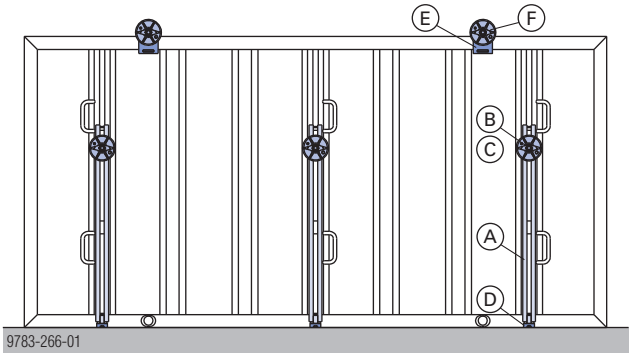
## Max. pour height 1.20 m (3'-11 1/4")

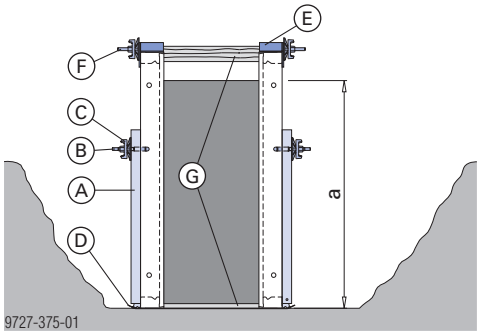
The foundation clamps are fixed in the continuous hardware slot in the waling profiles of the 1.35x2.70 m panels, using **Framax clamping bolts 4-8cm**.

The panels are anchored across the top by the **Framax anchoring bracket**.

| | Foundation clamps | Anchoring brackets |
|---|---|---|
| 2.70m panel | 3 | 2 |

### 1.35x2.70m panel




a ... max. 120 cm (3'-11 1/4")

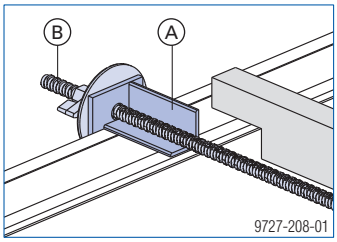
**A** Framax foundation clamp
**B** Framax clamping bolt 4-8cm
**C** Super-plate 15.0
**D** Doka perforated tape
**E** Framax S anchoring bracket
**F** Form-tie system 15.0mm or Coil rod system 3/4"
**G** Wooden spacer

## Horizontal panels in narrow trench situations

The use of the **Framax anchoring bracket** for the **top tie** has the following effects:

- Tie-rod is held above panel (not in the concrete)
- Any tie spacing can be selected

### Framax anchoring bracket

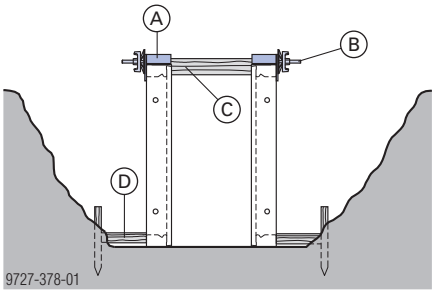



**A** Framax S anchoring bracket
**B** Form-tie system 15.0mm or Coil rod system 3/4"

| Anchoring brackets |
|---|
| 2 per panel |

**Framax S anchoring bracket:**
Permitted capacity: 3,300 lbs (15 kN)

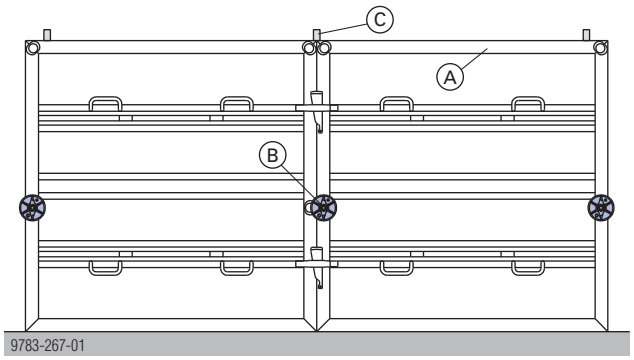
In very narrow trenches, the bottom tie can be replaced by horizontal bracing.

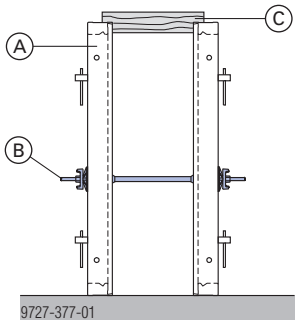



**A** Framax S anchoring bracket
**B** Form-tie system 15.0mm or Coil rod system 3/4"
**C** Wooden spacer
**D** Horizontal bracing

## Upright 1.35 m high panels

In the example shown here, one form-tie is sufficient for the height.



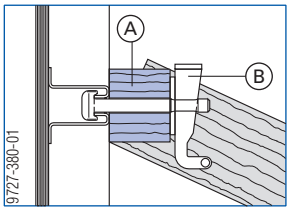

**A** Framax S Xlife panel 1.35x1.35m
**B** Form-tie system 15.0mm or Coil rod system $^3/_4$"
**C** Wooden spacer

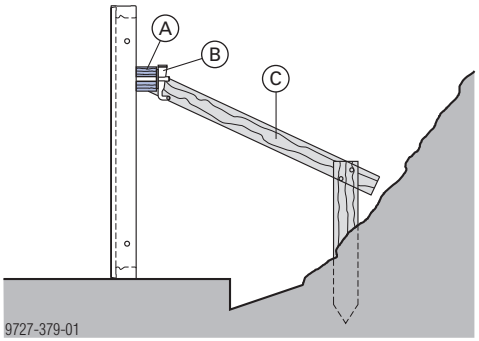
Be sure to fit the wooden spacers exactly as shown!

## Bracing the panels

With the aid of a connecting timber and an in-place timber brace, you can brace the panels so that they stand firmly.

### Connecting timber




**A** Connecting timber
**B** Framax wedge clamp
**C** Timber brace

# Using as downturned-beam formwork

Using **Framax S anchoring brackets** for the **top and bottom ties** has the following effects:

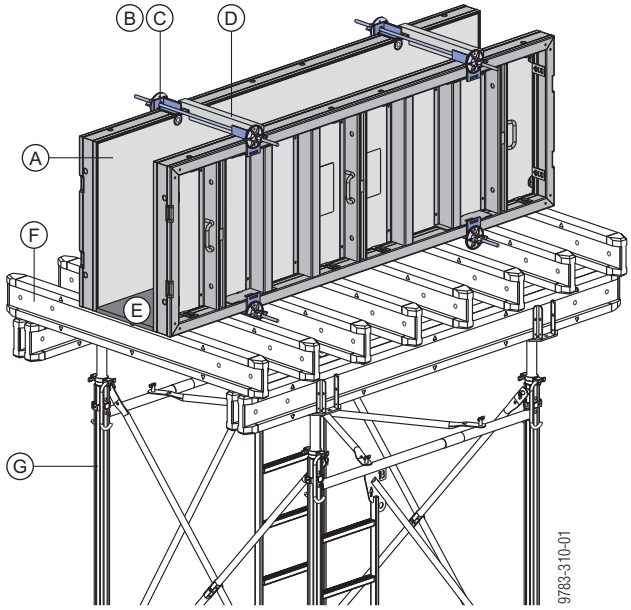
- The tie-points are above/below the panel – no ties in the concrete
- Any tie spacing can be selected

### Number of anchoring brackets per 2.70m length of panel:

| | Downstand beam height | |
|---|---|---|
| | up to 3'-0" (90 cm) | up to 4'-5" (135 cm) |
| **Top** anchoring brackets | 2 | 2 |
| **Bottom** anchoring brackets | 2 | 3 |

**Framax S anchoring bracket:**
Permitted capacity: 3,300 lbs (15 kN)

### Example with 0.90x2.70m panel

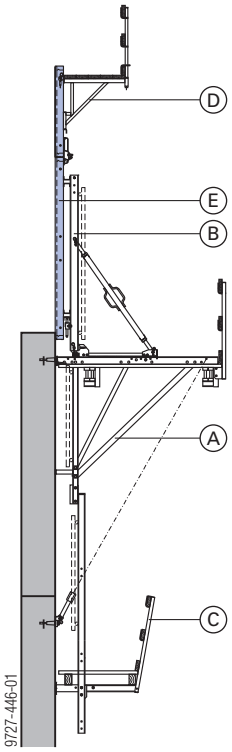



| | |
|---|---|
| **A** | Framax S Xlife panel 0.90x2.70m |
| **B** | Framax S anchoring bracket |
| **C** | Tie-rod system 15.0mm or Coil rod system $^3/_4$" |
| **D** | Wooden spacer |
| **E** | Formwork sheet |
| **F** | Doka beam H20 |
| **G** | Shoring tower (e.g. Staxo 100) |

# Framax Xlife in conjunction with . . .

## Doka climbing formwork MF

The Doka climbing formwork MF proves its versatility on all tall structures. The formwork and climbing scaffold are linked together as a single unit which can be repositioned in one single crane cycle.



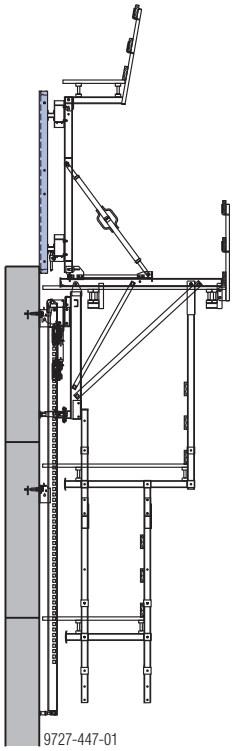

| | |
|---|---|
| **A** | Climbing bracket MF240 |
| **B** | Traveling unit MF |
| **C** | Suspended platform MF75 5.00m |
| **D** | Framax bracket 90 |
| **E** | Framax Xlife panel |

Follow the directions in the "Climbing formwork MF" User Information booklet!

## Doka automatic climbing formwork

With their modular design concept, these crane-independent automatic climbing formwork systems provide an efficient solution for every type of structure.

The formwork and climbing scaffold are linked together as a single unit which can be lifted and reset hydraulically.



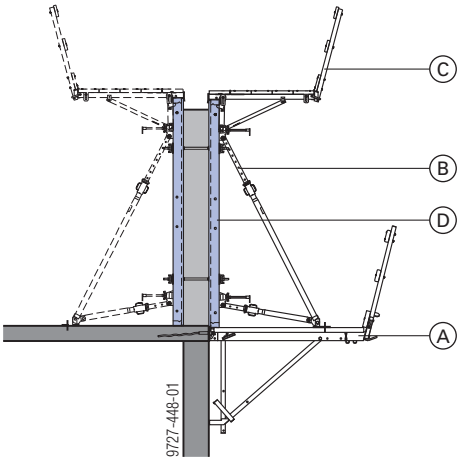

Follow the directions in the relevant User Information booklet!

## Doka folding platforms

The high capacity of these work and safety scaffolds means that the formwork can safely be stood on the folding platforms.

Adding a few standard parts turns your work platform into a climbing formwork unit which can be shifted as a complete form and access-platform in one single operation.

This makes work at great heights faster and more efficient.




| | |
|---|---|
| **A** | Doka folding platform |
| **B** | Pipe brace |
| **C** | Framax pouring platform |
| **D** | Framax Xlife panel |

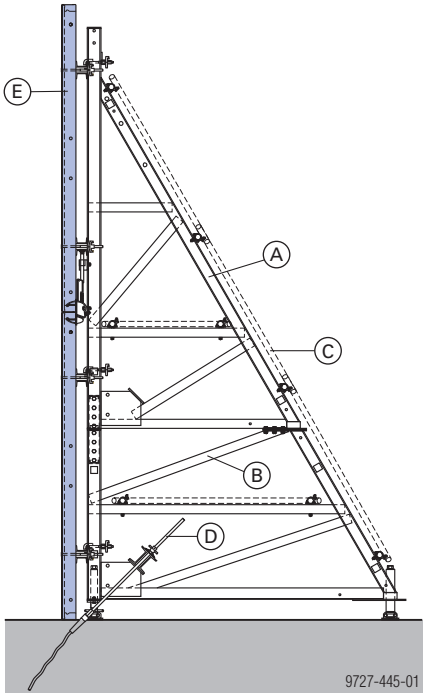
Follow the directions in the "Folding platform K" and "Climbing formwork K" User Information booklets!

## Doka supporting construction frames

The **Doka supporting construction frame Universal F** or **Doka supporting construction frame Variabel** also enable the sturdy Framax Xlife panels to be used as single-sided wall formwork.

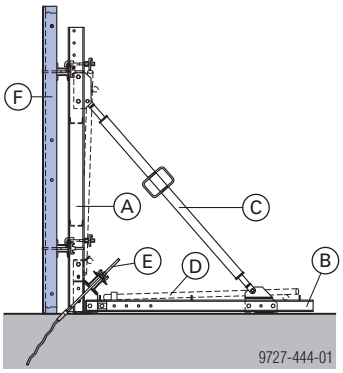
Follow the directions in the “Doka supporting construction frames” User Information!

### Supporting construction frame Universal F




| | |
|---|---|
| **A** | Supporting construction frame Universal F 4.50m |
| **B** | Attachable frame F 1.50m |
| **C** | Bracing |
| **D** | Tension anchoring |
| **E** | Framax Xlife panel |

### "Variabel" supporting construction frame




| | |
|---|---|
| **A** | Waling WU14 for supporting construction frame |
| **B** | Multi-purpose waling WS10 Top50 2.00m |
| **C** | Spindle strut 12 3.00m |
| **D** | Bracing |
| **E** | Tension anchoring |
| **F** | Framax Xlife panel |

# Formwork planning with Tipos-Doka

## Tipos-Doka helps you to form even more cost-efficiently

**Tipos-Doka was developed to assist you in planning your Doka formwork assignments. For wall formwork, floor formwork and platforms, it puts the same tools into your hands that we at Doka use ourselves for formwork planning.**

## Easy to use, fast and accurate results

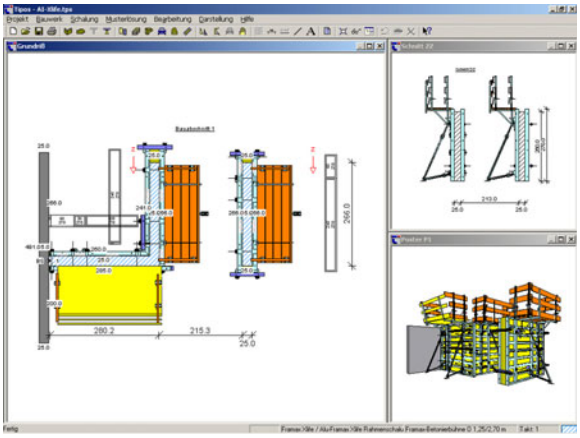
The easy-to-use interface makes for very fast working. From when you input your layout (with the "Schal-Igel"® on-screen assistant), all the way through to when you manually put the finishing touches to the formwork solution the program gives you. All this saves time - yours.

With the program's many templates and wizards, you can be sure of always getting the optimum technical and economical solution to your formwork task. This makes for greater operational reliability, and cuts costs.

You can get to work right away with the piece-lists, plans, views, sections and perspective drawings that the program gives you. Operational reliability is also enhanced by the high level of detail of the plans.

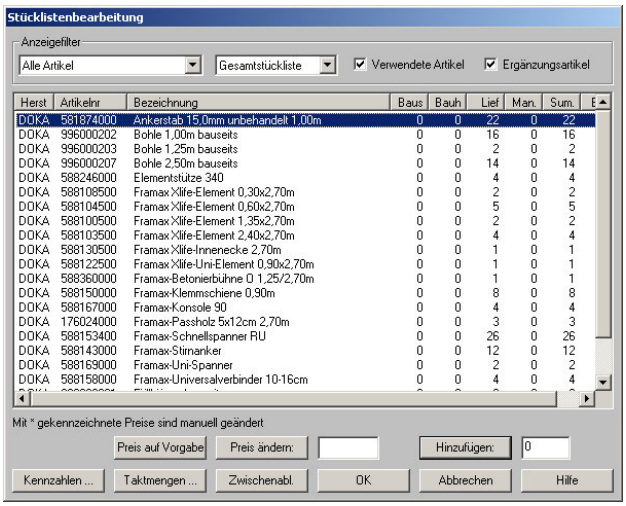
Among other things, Tipos-Doka plans the following with Framax Xlife:

- Distribution of the framed formwork panels
- Any vertically stacked configurations that are needed
- Fillers and accessories
- Pouring platforms, safety railings etc.



Drawings of formwork and platforms really can be this detailed. Both for the layout and for spatial representations, Tipos-Doka sets an impressive new standard of visual presentation.

## Always the right quantities of formwork and accessories


Stücklistenbearbeitung
Anzeigefilter
Alle Artikel
Gesamtstückliste
Verwendete Artikel
Ergänzungsartikel
Herst Artikelnr Bezeichnung Baus Bauh Lief Man. Sum.
DOKA 581874000 Ankerstab 15,0mm unbehandelt 1,00m 0 0 22 0 22
DOKA 996000202 Bohle 1,00m bauseits 0 0 16 0 16
DOKA 996000203 Bohle 1,25m bauseits 0 0 2 0 2
DOKA 996000207 Bohle 2,50m bauseits 0 0 14 0 14
DOKA 588246000 Elementstütze 340 0 0 4 0 4
DOKA 588108500 Framax Xlife-Element 0,30x2,70m 0 0 2 0 2
DOKA 588104500 Framax Xlife-Element 0,60x2,70m 0 0 5 0 5
DOKA 588100500 Framax Xlife-Element 1,35x2,70m 0 0 2 0 2
DOKA 588103500 Framax Xlife-Element 2,40x2,70m 0 0 4 0 4
DOKA 588130500 Framax Xlife-Innenecke 2,70m 0 0 1 0 1
DOKA 588122500 Framax Xlife-Uni-Element 0,90x2,70m 0 0 1 0 1
DOKA 588360000 Framax-Betonierbühne O 1,25/2,70m 0 0 1 0 1
DOKA 588150000 Framax-Klemmschiene 0,90m 0 0 8 0 8
DOKA 588167000 Framax-Konsole 90 0 0 4 0 4
DOKA 176024000 Framax-Passholz 5x12cm 2,70m 0 0 3 0 3
DOKA 588153400 Framax-Schnellspanner RU 0 0 26 0 26
DOKA 588143000 Framax-Stimanker 0 0 12 0 12
DOKA 588169000 Framax-Uni-Spanner 0 0 2 0 2
DOKA 588158000 Framax-Universalverbinder 10-16cm 0 0 4 0 4
Mit * gekennzeichnete Preise sind manuell geändert
Preis auf Vorgabe
Preis ändern:
Hinzufügen:
0
Kennzahlen ...
Taktmengen ...
Zwischenabl.
OK
Abbrechen
Hilfe

You can import the automatically generated piece-lists into many other programs for further processing.

Formwork components and accessories that have to be organized at short notice, or replaced by improvisation, are the ones that cost the most. This is why Tipos-Doka gives you complete piece-lists that leave no room for improvisation. Planning with Tipos-Doka eliminates costs before they have a chance to even arise. And your depot can make the best possible use of its stocks.

# Doka Reconditioning Service

## So that your formwork is in "top form" for its next assignment

Inspecting, cleaning and maintaining your Doka framed formwork - all jobs which the Doka Reconditioning Service will be pleased to take care of for you. Its highly qualified staff and special equipment will soon get your formwork back in top form, quickly and economically.

**The big benefit for you:** You always have formwork that is **ready for use**, and also **extend the service life** of your equipment.

What's more: It is only with well-maintained formwork that you will achieve the desired quality of concrete surface.

In our modern plants, your formwork will be **carefully cleaned** using energy-saving and environmentally sound technology.

The panels are then inspected for damage and dimensional accuracy, and overhauled where necessary. Any damaged form-ply is repaired, or - if necessary - replaced.

# Cleaning and care of your equipment

The **high-grade powder-coating of the frame** and the **special coating of the Xlife sheet** greatly reduce the amount of cleaning needed.

## Cleaning

**Immediately after pouring**

➤ Remove any blobs of concrete from the back-face of the formwork, using water (without any added sand).

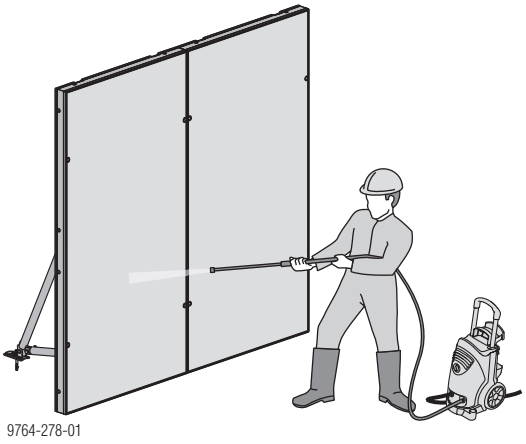
**Immediately after stripping the formwork**

➤ Clean the formwork with a high-pressure washer and a scraper.

## Cleaning equipment

### High-pressure washer

The special coating of the Xlife sheet also makes it possible for the sheet to be cleaned with a **high-pressure washer**.



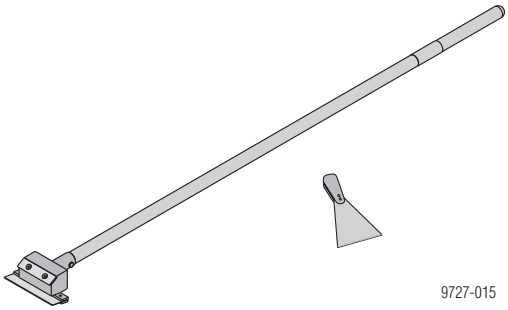
9764-278-01

**Observe the following points:**

- Appliance pressure rating:
  3,000 psi (200 bar) to max. 4,500 psi (300 bar)
- Keep the water-jet the correct distance from the formwork, and move it at the right speed:
  - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the surface.
- Make only moderate use of the jet around the silicone sealing strip:
  - If the pressure is too high, this will damage the silicone sealing strip.
  - Do not aim the jet at one place for too long.

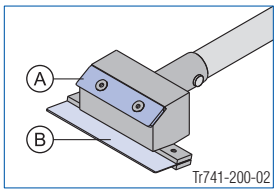
### Concrete scraper

For removing any concrete remnants, we recommend using a **Double scraper Xlife** and a spatula.

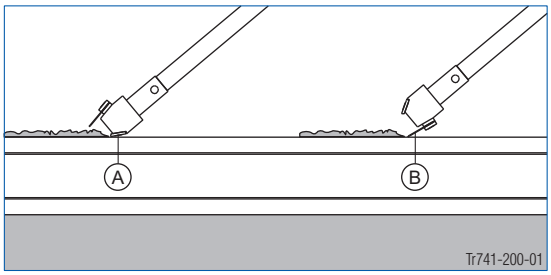


9727-015

**Functional description:**




Tr741-200-02

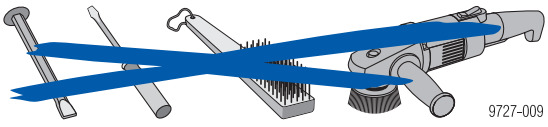



Tr741-200-01

**A** Blade for dealing with heavy soiling
**B** Blade for dealing with slight soiling

**Note:**

Do not use any pointed or sharp objects, wire brushes, rotating grinding disks or pan scourers.



9727-009

## Concrete release agent

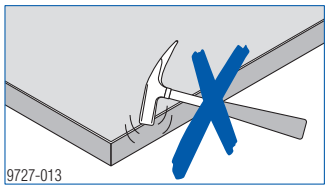
**Before every pour**

➤ Apply release agent to the formwork sheet and the end faces **extremely thinly**, **evenly** and **in a continuous layer** (make sure there are no traces of release-agent running down the formwork sheet)! Applying too much release agent will spoil the concrete finish.

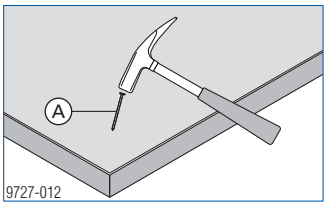
To determine the right dosage and to make sure that you are using the agent correctly, test it on less important parts of the structure first.

## Care

- No hammer-blows to the frame profiles

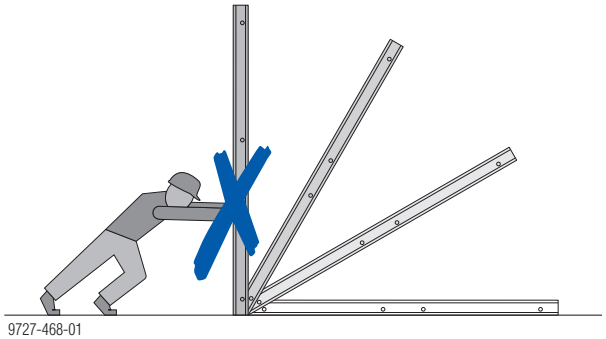



- Do not use nails on the formwork that are longer than 2 $^1/_4$" (60 mm)

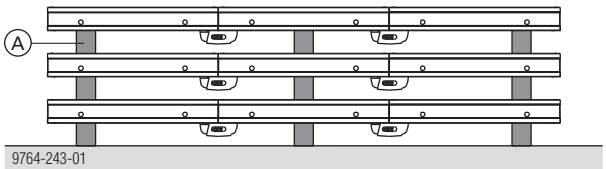



**A** max. l = 2 $^1/_4$" (60 mm)

- Never push over panels or allow them to fall




- Only stack panel gangs on top of one another with timber battens **(A)** between each layer.

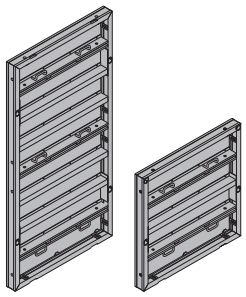



This prevents the formwork sheets from being damaged by the connector components.

| | [lbs] | Article # |
|---|---|---|
| **Framax S Xlife panel 1.35x2.70m** | **484.0** | **588501500** |
| **Framax S Xlife panel 1.05x2.70m** | **386.0** | **588546500** |
| **Framax S Xlife panel 0.90x2.70m** | **302.0** | **588502500** |
| **Framax S Xlife panel 0.75x2.70m** | **258.0** | **588547500** |
| **Framax S Xlife panel 0.60x2.70m** | **222.0** | **588503500** |
| **Framax S Xlife panel 0.45x2.70m** | **182.0** | **588504500** |
| **Framax S Xlife panel 0.30x2.70m** | **149.0** | **588505500** |
| **Framax S Xlife panel 1.35x1.35m** | **224.0** | **588510500** |
| **Framax S Xlife panel 1.05x1.35m** | **180.0** | **588549500** |
| **Framax S Xlife panel 0.90x1.35m** | **164.0** | **588511500** |
| **Framax S Xlife panel 0.75x1.35m** | **138.0** | **588553500** |
| **Framax S Xlife panel 0.60x1.35m** | **114.0** | **588512500** |
| **Framax S Xlife panel 0.45x1.35m** | **92.8** | **588513500** |
| **Framax S Xlife panel 0.30x1.35m** | **77.2** | **588514500** |

Framax S Xlife-Element

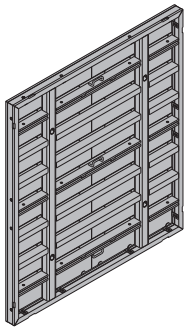
Galvanized, powder-coated



| | | |
|---|---|---|
| **Framax S Xlife panel 2.40x2.70m** | **837.0** | **588544500** |

Framax S Xlife-Element 2,40x2,70m

Galvanized

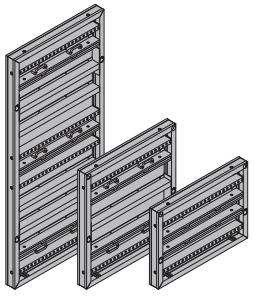


| | | |
|---|---|---|
| **Framax S Xlife universal panel 1.22x2.70m** | **525.0** | **588545500** |
| **Framax S Xlife universal panel 1.22x1.35m** | **274.0** | **588548500** |
| **Framax S Xlife universal panel 1.22x0.90m** | **131.0** | **588554500** |
| **Framax S Xlife universal panel 0.90x2.70m** | **351.0** | **588507500** |
| **Framax S Xlife universal panel 0.90x1.35m** | **185.0** | **588516500** |
| **Framax S Xlife universal panel 0.90x0.90m** | **139.0** | **588524500** |

Framax S Xlife-Uni-Element

Galvanized, powder-coated

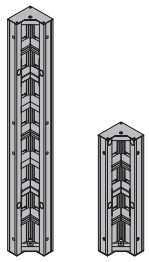
Corners marked in blue



| | [lbs] | Article # |
|---|---|---|
| **Framax S Xlife inside corner 2.70m** | **222.0** | **588506500** |
| **Framax S Xlife inside corner 1.35m** | **125.0** | **588515500** |

Framax S Xlife-Innenecke

Galvanized, powder-coated



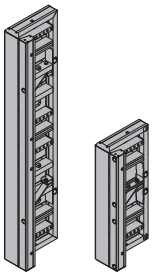
| | | |
|---|---|---|
| **Framax S Xlife pilaster panel 2.70m** | **423.0** | **588563500** |
| **Framax S Xlife pilaster panel 1.35m** | **224.0** | **588564500** |

Framax S Xlife-Stützenvorlageelement

Galvanized, powder-coated

Length: 2' (61 cm)

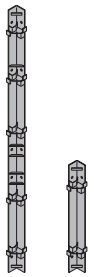
Width: 1' (30,5 cm)



| | | |
|---|---|---|
| **Framax outside corner 2.70m** | **104.0** | **588126000** |
| **Framax outside corner 1.35m** | **51.8** | **588128000** |

Framax-Außenecke

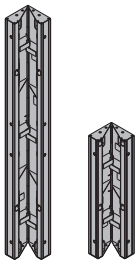
Galvanized



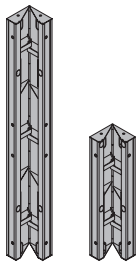
| | | |
|---|---|---|
| **Framax S hinged inside corner l galv. 2.70m** | **226.0** | **588509500** |
| **Framax S hinged inside corner l galv. 1.35m** | **127.0** | **588518500** |

Framax S-Scharnierecke l verzinkt

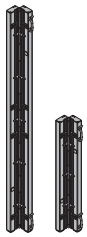
Galvanized



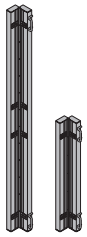
| | [lbs] | Article # |
|---|---|---|
| **Framax S hinged inside corner l 2.70m** | **226.0** | **588509000** |
| **Framax S hinged inside corner l 1.35m** | **127.0** | **588518000** |
| Framax S Scharnierecke l | | |
| Powder-coated, blue | | |



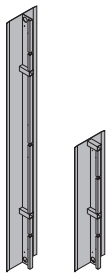
| | | |
|---|---|---|
| **Framax hinged outside corner A galv. 2.70m** | **113.0** | **588942000** |
| **Framax hinged outside corner A galv. 1.35m** | **60.4** | **588943000** |
| Framax-Scharnierecke A verzinkt | | |
| Galvanized | | |



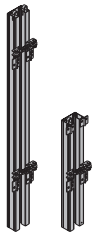
| | | |
|---|---|---|
| **Framax hinged outside corner A 2.70m** | **116.0** | **588134000** |
| **Framax hinged outside corner A 1.35m** | **60.4** | **588135000** |
| Framax-Scharnierecke A | | |
| Powder-coated, blue | | |



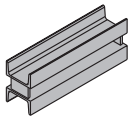
| | | |
|---|---|---|
| **Framax S closure plate R30 2.70m** | **97.0** | **588529000** |
| **Framax S closure plate R30 1.35m** | **49.4** | **588534000** |
| Framax S Ausgleichsblech R30 | | |
| Powder-coated, blue | | |
| Width: 1'-3" (38 cm) | | |



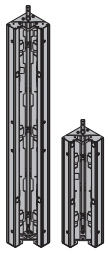
| | [lbs] | Article # |
|---|---|---|
| **Framax S circular forming plate 0.20x2.70m** | **130.0** | **588588000** |
| **Framax S circular forming plate 0.25x2.70m** | **134.0** | **588589000** |
| **Framax S circular forming plate 0.30x2.70m** | **146.0** | **588590000** |
| **Framax S circular forming plate 0.20x1.35m** | **67.2** | **588591000** |
| **Framax S circular forming plate 0.25x1.35m** | **72.8** | **588592000** |
| **Framax S circular forming plate 0.30x1.35m** | **77.2** | **588593000** |
| Framax S-Bogenblech | | |
| Galvanized, powder-coated | | |



| | | |
|---|---|---|
| **Framax S steel waling RD 0.40m** | **19.4** | **588594000** |
| Framax S-Stahlwandriegel RD 0,40m | | |
| Painted blue | | |

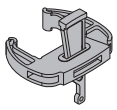


| | | |
|---|---|---|
| **Framax S bias cut corner l 2.70m** | **388.0** | **588527000** |
| **Framax S bias cut corner l 1.35m** | **207.0** | **588528000** |
| Framax S Ausschalecke l | | |
| Galvanized, powder-coated | | |

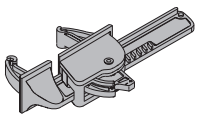


| | | |
|---|---|---|
| **Framax stripping spindle l with ratchet** | **12.1** | **588653000** |
| Framax-Ausschalspindel l mit Ratsche | | |
| Galvanized | | |
| Height: 10" (24,8 cm) | | |

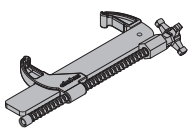
| | | |
|---|---|---|
| **Framax quick acting clamp RU** | **7.3** | **588153400** |
| Framax-Schnellspanner RU | | |
| Galvanized | | |
| Length: 8" (20 cm) | | |

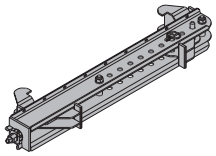
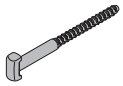
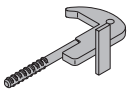
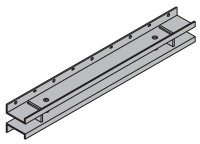
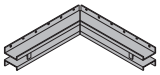
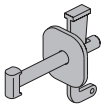


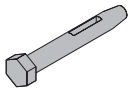
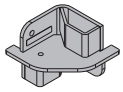
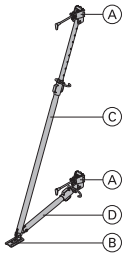
| | | |
|---|---|---|
| **Framax multi function clamp** | **12.8** | **588169000** |
| Framax-Uni-Spanner | | |
| Galvanized | | |
| Length: 1'-4" (40 cm) | | |



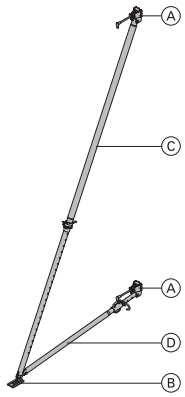
| | | |
|---|---|---|
| **Framax adjustable clamp** | **11.7** | **588168000** |
| Framax-Ausgleichsspanner | | |
| Galvanized | | |
| Length: 1'-7" (48 cm) | | |



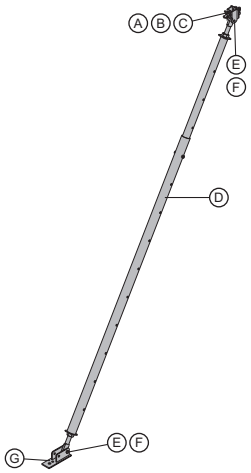
| | [lbs] | Article # |
|---|---|---|
| **Framax stop-end waler tie 15-45cm** | **33.1** | **588940000** |
| **Framax stop-end waler tie 15-75cm** | **45.4** | **588941000** |
| Framax-Stirnabschalzwinge<br>Galvanized | | |
|  | | |
| **Framax universal fixing bolt 10-16cm** | **1.3** | **588158000** |
| Framax-Universalverbinder 10-16cm<br>Galvanized<br>Length: 10" (26 cm) | | |
|  | | |
| **Framax universal fixing bolt 10-25cm** | **1.5** | **583002000** |
| Framax-Universalverbinder 10-25cm<br>Galvanized<br>Length: 1'-2" (36 cm) | | |
| | | |
| **Framax stop-end tie** | **3.3** | **588143000** |
| Framax-Stirnanker<br>Galvanized<br>Length: 11" (29 cm) | | |
|  | | |
| **Framax pressure plate 6/15** | **1.8** | **588183000** |
| Framax-Druckplatte 6/15<br>Galvanized | | |
| | | |
| **Framax S universal waling 0.90m** | **23.6** | **588519000** |
| **Framax S universal waling 1.50m** | **39.2** | **588520000** |
| Framax S Klemmschiene<br>Painted blue | | |
|  | | |
| **Framax S universal corner waling** | **28.9** | **588521000** |
| Framax S Eckklemmschiene<br>Painted blue<br>Galvanized<br>Leg length: 2' (60 cm) | | |
|  | | |
| **Framax wedge clamp** | **3.3** | **588152000** |
| Framax-Spannklemme<br>Galvanized<br>Length: 8" (21 cm) | | |
|  | | |
| **Framax tensioning wedge R** | **0.44** | **588155000** |
| Framax-Spannkeil R<br>Galvanized<br>Height: 4 1/2" (11 cm) | | |
| | | |

| | [lbs] | Article # |
|---|---|---|
| **Framax wedge bolt RA 7.5** | **0.75** | **588159000** |
| Framax-Keilbolzen RA 7,5<br>Galvanized<br>Length: 6" (15 cm) | | |
|  | | |
| **Framax S corner clamp** | **7.5** | **588596000** |
| Framax S-Eckspannwinkel | | |
|  | | |
| **Panel strut 340** | **66.6** | **588246000** |
| Elementstütze 340<br>consisting of: | | |
| (A) **Prop head**<br>2 pcs.<br>Galvanized<br>Length: 1'-4" (40,8 cm)<br>Width: 4 1/2" (11,8 cm)<br>Height: 7" (17,6 cm) | **7.7** | **588244000** |
| (B) **Prop shoe**<br>Galvanized<br>Length: 8" (20 cm)<br>Width: 4 1/2" (11 cm)<br>Height: 4" (10 cm) | **4.6** | **588245000** |
| (C) **Plumbing strut 340**<br>Galvanized<br>Length: 6'-3" - 11'-2" (190 - 341 cm) | **31.3** | **588247000** |
| (D) **Adjusting strut 120**<br>Galvanized<br>Length: 2'-7" - 4'-3" (80 - 130 cm)<br>Galvanized<br>Delivery condition: folded closed | **15.9** | **588248000** |
|  | | |

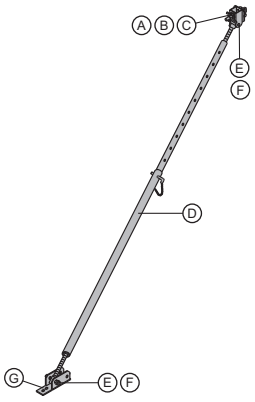
| | [lbs] | Article # |
|---|---|---|
| **Panel strut 540** | **108.0** | **588249000** |
| Elementstütze 540 | | |
| consisting of: | | |
| (A) **Prop head** | **7.7** | **588244000** |
| 2 pcs. | | |
| Galvanized | | |
| Length: 1'-4" (40,8 cm) | | |
| Width: 4 1/2" (11,8 cm) | | |
| Height: 7" (17,6 cm) | | |
| (B) **Prop shoe** | **4.6** | **588245000** |
| Galvanized | | |
| Length: 8" (20 cm) | | |
| Width: 4 1/2" (11 cm) | | |
| Height: 4" (10 cm) | | |
| (C) **Plumbing strut 540** | **65.3** | **588250000** |
| Galvanized | | |
| Length: 10'-2" - 18'-1" (309 - 550 cm) | | |
| (D) **Adjusting strut 220** | **22.5** | **588251000** |
| Length: 5'-7" - 7'-4" (171 - 224 cm) | | |
| Galvanized | | |
| Delivery condition: folded closed | | |




| | | |
|---|---|---|
| **Pipe brace 12'-0"-21'-0"** | | |
| Rohrstütze 12'-0"-21'-0" | | |
| consisting of: | | |
| (A) **Pipe brace head Framax S** | **5.3** | **585089000** |
| (B) **Framax universal fixing bolt 10-25cm** | **1.5** | **583002000** |
| Galvanized | | |
| Length: 1'-2" (36 cm) | | |
| (C) **Star grip nut 15.0 G** | **1.0** | **587544000** |
| Galvanized | | |
| Width: 4" (10 cm) | | |
| Height: 2" (5 cm) | | |
| Width-across: 30 mm | | |
| (D) **Pipe brace 12'-0"-21'-0"** | **160.0** | **585091000** |
| (E) **Speed bolt 3/4"x4"** | **0.64** | **585650000** |
| 2 pcs. | | |
| (F) **Speed nut 3/4"** | **0.2** | **585652000** |
| 2 pcs. | | |
| (G) **Pipe brace shoe** | **10.4** | **585088000** |
| Galvanized | | |
| Delivery condition: separate parts | | |

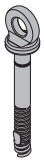



| | | |
|---|---|---|
| **Pipe brace 22'-0"-40'-0"** | | |
| Rohrstütze 22'-0"-40'-0" | | |
| consisting of: | | |
| (A) **Pipe brace head Framax S** | **5.3** | **585089000** |
| (B) **Framax universal fixing bolt 10-25cm** | **1.5** | **583002000** |
| Galvanized | | |
| Length: 1'-2" (36 cm) | | |
| (C) **Star grip nut 15.0 G** | **1.0** | **587544000** |
| Galvanized | | |
| Width: 4" (10 cm) | | |
| Height: 2" (5 cm) | | |
| Width-across: 30 mm | | |
| (D) **Pipe brace 22'-0"-40'-0"** | **410.0** | **585092000** |
| (E) **Speed bolt 3/4"x4"** | **0.64** | **585650000** |
| 2 pcs. | | |
| (F) **Speed nut 3/4"** | **0.2** | **585652000** |
| 2 pcs. | | |
| (G) **Pipe brace shoe** | **10.4** | **585088000** |
| Galvanized | | |
| Delivery condition: separate parts | | |



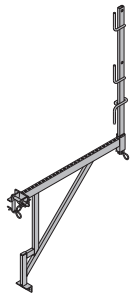

| | | |
|---|---|---|
| **Bracing clip Framax S** | **2.6** | **585090000** |
| Haltewinkel Framax S | | |
| Length: 6" (15,87 cm) | | |
| Width: 4" (10,16 cm) | | |
| Height: 3" (7,62 cm) | | |

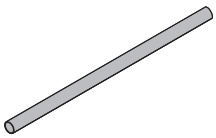
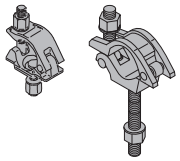
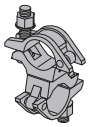
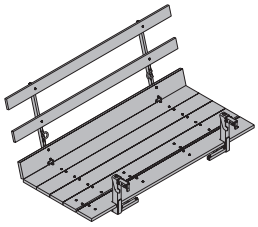
| | | |
|---|---|---|
| **Doka express anchor 16x125mm** | **0.68** | **588631000** |
| Doka-Expressanker 16x125mm | | |
| Galvanized | | |
| Length: 7" (18 cm) | | |
| Follow fitting instructions! | | |

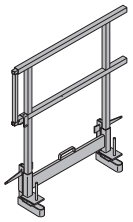
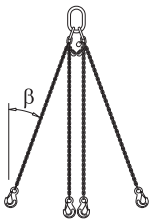
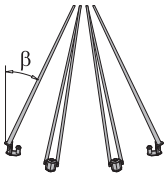


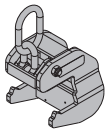
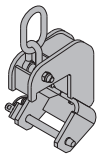
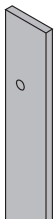
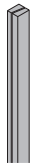
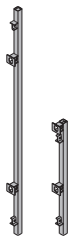
| | | |
|---|---|---|
| **Doka coil 16mm** | **0.02** | **588633000** |
| Doka-Coil 16mm | | |
| Galvanized | | |
| Diameter: 5/8" (1,6 cm) | | |

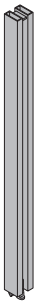
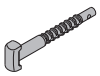
| | | |
|---|---|---|
| **Framax bracket 90** | **27.6** | **588167000** |
| Framax-Konsole 90 | | |
| Galvanized | | |
| Width: 3'-5" (103 cm) | | |
| Height: 6'-1" (185 cm) | | |
| Delivery condition: railing included | | |

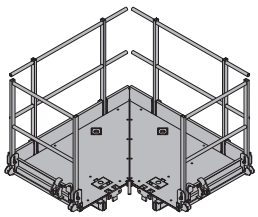
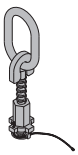
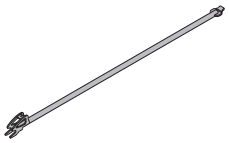
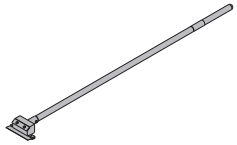


| | [lbs] | Article # |
|---|---|---|
| **Scaffold tube connection**<br>Gerüstrohranschluss<br>Galvanized<br>Height: 2 3/4" (7 cm)<br>Special order only!<br> | **0.6** | **584375000** |
| **Scaffolding tube 1 1/2"x6'-0"** | **16.3** | **585070000** |
| **Scaffolding tube 1 1/2"x8'-0"** | **21.8** | **585071000** |
| **Scaffolding tube 1 1/2"x10'-6"** | **28.7** | **585072000** |
| **Scaffolding tube 1 1/2"x13'-0"** | **35.3** | **585073000** |
| **Scaffolding tube 1 1/2"x15'-0"** | **40.8** | **585074000** |
| **Scaffolding tube 1 1/2"x21'-0"** | **57.1** | **585075000** |
| Gerüstrohr 1 1/2"<br>Galvanized<br>  | | |
| **Screw-on coupler 48mm 50** | **1.9** | **682002000** |
| **Screw-on coupler 48mm 95** | **1.9** | **586013000** |
| Anschraubkupplung<br>Galvanized<br>Width-across: 22 mm<br>  | | |
| **Swivel coupler 48mm**<br>Drehkupplung 48mm<br>Galvanized<br>Width-across: 22 mm<br>  | **3.3** | **582560000** |
| **Framax pouring platform U 1.25/2.70m**<br>Framax-Betonierbühne U 1,25/2,70m<br>Steel parts galvanized<br>Timber parts varnished yellow<br>Delivery condition: folded closed<br>  | **281.0** | **588377000** |
| **Handrail clamp S**<br>Schutzgeländerzwinge S<br>Galvanized<br>Height: 4' - 5'-7" (123 - 171 cm)<br> | **25.4** | **580470000** |

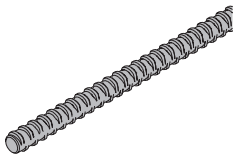
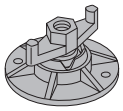
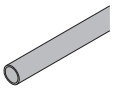
| | [lbs] | Article # |
|---|---|---|
| **Handrail post 1.10m**<br>Schutzgeländer 1,10m<br>Galvanized<br>Height: 4'-5" (134 cm)<br> | **12.3** | **584384000** |
| **Side handrail clamping unit T**<br>Seitenschutzgeländer T<br>Galvanized<br>Length: 3'-9" - 5'-9" (115 - 175 cm)<br>Height: 3'-8" (112 cm)<br>Special order only!<br>  | **64.2** | **580488000** |
| **Doka 4-part chain 3.20m**<br>Doka-Vierstrangkette 3,20m<br>Follow the directions in the "Operating Instructions"!<br>  | **33.1** | **588620000** |
| **Framax transport bolt 5kN**<br>Framax-Transportbolzen 5kN<br>Follow the directions in the "Operating Instructions"!<br> | **4.2** | **588621000** |
| **Framax transport gear**<br>Framax-Transportgehänge<br>Galvanized<br>Follow the directions in the "Operating Instructions"!<br>  | **29.3** | **588232000** |
| **Dokamatic lifting strap 13.00m**<br>Dokamatic-Umsetzgurt 13,00m<br>Green<br>Follow the directions in the "Operating Instructions"!<br> | **23.1** | **586231000** |

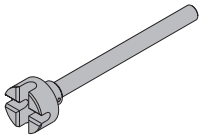
| | [lbs] | Article # |
|---|---|---|
| **Framax lifting hook**<br>Framax-Umsetzbügel<br>  <br>Galvanized<br>Height: 9" (22 cm)<br>Follow the directions in the "Operating Instructions"! | **23.4** | **588149000** |
| **Framax lifting hook 20kN**<br>Framax-Umsetzbügel 20kN<br>  <br>Galvanized<br>Height: 1' (30 cm)<br>Follow the directions in the "Operating Instructions"! | **28.2** | **588526000** |
| **Framax fitting timber 2x12cm 2.70m**<br>**Framax fitting timber 3x12cm 2.70m**<br>**Framax fitting timber 5x12cm 2.70m**<br>**Framax fitting timber 10x12cm 2.70m**<br>Framax-Passholz 2,70m<br>  <br>Varnished yellow | **6.8**<br>**10.4**<br>**17.2**<br>**34.2** | **176020000**<br>**176022000**<br>**176024000**<br>**176026000** |
| **Framax moulded timber 27mm 2.70m**<br>**Framax moulded timber 21mm 2.70m**<br>**Framax moulded timber 18mm 2.70m**<br>Framax-Profilholz<br> <br>Varnished yellow | **16.8**<br>**17.6**<br>**18.5** | **176012000**<br>**176010000**<br>**176119000** |
| **Framax formwork stripping timb. 10x12cm 2.85m**<br>Framax-Ausschalholz 10x12cm 2,85m<br>  <br>Varnished yellow | **36.2** | **176008000** |
| **Framax S steel filler 6cm 2.70m**<br>**Framax S steel filler 6cm 1.35m**<br>Framax S Stahlausgleich<br>  <br>Powder-coated, blue | **35.7**<br>**20.3** | **588561000**<br>**588562000** |

| | [lbs] | Article # |
|---|---|---|
| **Connecting timber**<br>Anklemmholz<br> <br>Varnished yellow<br>Width: 4" (10 cm) | **1.5** | **176030000** |
| **Framax triangular ledge 2.70m**<br>Framax-Dreikantleiste 2,70m<br> | **0.84** | **588170000** |
| **Framax frontal triangular ledge 2.70m**<br>Framax-Stirndreikantleiste 2,70m<br> <br>Gray | **4.2** | **588129000** |
| **Framax S tie-holder bracket**<br>Framax S Ankerhaltewinkel<br> <br>Painted blue<br>Width: 2" (5 cm)<br>Height: 5" (13 cm) | **2.9** | **588523000** |
| **Framax foundation clamp 0.90m**<br>Framax-Fundamentspanner 0,90m<br>  <br>Galvanized | **10.8** | **588141000** |
| **Framax clamping bolt 4-8cm**<br>Framax-Klemmschraube 4-8cm<br>  <br>Galvanized<br>Length: 7 $^{1}/_{2}$" (19 cm) | **0.86** | **588107000** |
| **Doka perforated tape S 2" 25m**<br>Doka-Lochband S 2" 25m<br> | **37.5** | **588841000** |
| **Doka perforated tape 50x2.0mm 25m**<br>Doka-Lochband 50x2,0mm 25m<br> | **37.5** | **588206000** |
| **Framax universal panel plug R24.5**<br>Framax-Abdeckstopfen R24,5<br> <br>Yellow<br>Diameter: $^{3}/_{4}$" (2 cm) | **0.007** | **588181000** |

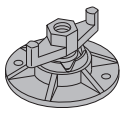
| | [lbs] | Article # |
|---|---|---|
| **Framax S frame hole plug 34.5**<br>Framax S-Ankerstopfen 34,5 | 0.009 | 588595000 |
| | | |
| **Framax S frame hole plug 44**<br>Framax S Ankerstopfen 44<br>Black<br>Diameter: 1 7/8" (4,8 cm) | 0.015 | 588522000 |
| | | |
| **Framax S stacking cone 34.5**<br>Framax S-Stapelkonus 34,5 | 0.066 | 588558000 |
| | | |
| **Framax S stacking cone**<br>Framax S-Stapelkonus<br>Blue<br>Diameter: 2" (5 cm) | 0.088 | 588543000 |
| | | |
| **Doka column formwork platform 150/90cm**<br>Doka-Stützenbühne 150/90cm<br>Galvanized<br>Length: 5'-8" (173 cm)<br>Width: 5'-8" (173 cm)<br>Height: 4'-3" (130 cm)<br>Delivery condition: folded closed | 467.0 | 588382000 |
|  | | |
| **Lifting ring**<br>Umsetzring<br>Galvanized<br>Height: 8" (20 cm) | 3.1 | 580340000 |
|  | | |
| **Framax 3-in-1 pole tool**<br>Framax-Montagestange<br>Galvanized<br>Length: 6'-4" (193 cm) | 9.3 | 588678000 |
|  | | |
| **Double scraper Xlife 100/150mm 1.40m**<br>Doppelschaber Xlife 100/150mm 1,40m | 6.2 | 588674000 |
|  | | |

## Tie rod system 7/8" [20.0mm]

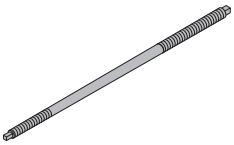
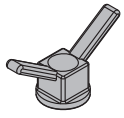
| | [lbs] | Article # |
|---|---|---|
| **Tie rod 20.0mm galvanized 0.50m** | 2.9 | 581411000 |
| **Tie rod 20.0mm galvanized 0.75m** | 4.2 | 581417000 |
| **Tie rod 20.0mm galvanized 1.00m** | 5.5 | 581412000 |
| **Tie rod 20.0mm galvanized 1.25m** | 7.1 | 581418000 |
| **Tie rod 20.0mm galvanized 1.50m** | 8.4 | 581413000 |
| **Tie rod 20.0mm galvanized 2.00m** | 11.0 | 581414000 |
| **Tie rod 20.0mm galvanized .....m** | 5.5 | 581410000 |
| **Tie rod 20.0mm non-treated 0.50m** | 2.9 | 581405000 |
| **Tie rod 20.0mm non-treated 0.75m** | 4.2 | 581416000 |
| **Tie rod 20.0mm non-treated 1.00m** | 5.5 | 581406000 |
| **Tie rod 20.0mm non-treated 1.50m** | 8.4 | 581407000 |
| **Tie rod 20.0mm non-treated 2.00m** | 11.0 | 581408000 |
| **Tie rod 20.0mm non-treated .....m** | 5.5 | 581403000 |
| Ankerstab 20,0mm<br>Special order only! | | |
|  | | |
| **Tie rod 7/8"x12'-0" [20.0mm]** | 20.5 | 585517000 |
| **Tie rod 7/8"x25'-0" [20.0mm]** | 42.1 | 585606000 |
| Ankerstab 7/8" [20,0mm] | | |
| | | |
| **Super plate 20.0 B**<br>Superplatte 20,0 B<br>Galvanized<br>Height: 2 3/4" (7 cm)<br>Diameter: 5 1/2" (14 cm)<br>Width-across: 34 mm | 4.4 | 581424000 |
|  | | |
| **Wing nut 7/8" [20.0mm]**<br>Flügelmutter 7/8" [20.0mm] | 0.79 | 585507000 |
| **Hexagon nut 20.0**<br>Sechskantmutter 20,0<br>Galvanized<br>Length: 2 3/4" (7 cm)<br>Width-across: 41 mm | 1.3 | 581420000 |
| | | |
| **Batter washer 7/8" [20.0mm]**<br>Winkelplatte 7/8" [20,0mm] | 4.0 | 585506000 |
| **Round coupler 7/8" [20.0mm] (DSI Thread)**<br>Verbindungsmuffe 7/8" [20,0mm] (DSI Thread) | 2.4 | 585514000 |
| **Plastic tube 26mm 2.00m**<br>Kunststoffrohr 26mm 2,00m | 1.3 | 581463000 |
|  | | |
| **Framax S universal cone 1"**<br>Framax S Universalkonus 1"<br>Gray<br>Diameter: 2 3/4" (7,2 cm) | 0.022 | 588530000 |
| | | |

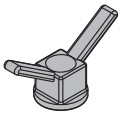
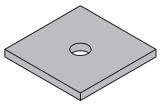
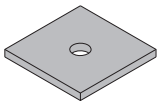
| | [lbs] | Article # |
|---|---|---|
| **Plug 26mm**<br>Verschlussstopfen 26mm<br>Gray | **0.013** | **581465000** |
| | | |
| **Tie rod wrench 15.0/20.0**<br>Ankerstabschlüssel 15,0/20,0<br>Galvanized<br>Length: 1'-3" (37 cm)<br>Diameter: 3 1/4" (8 cm) | **4.2** | **580594000** |
|  | | |

## Taper tie system 1 1/4"-1" & 7/8" [20,0]

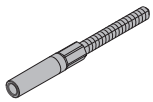
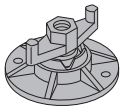
| | | |
|---|---|---|
| **Taper tie 1 1/4"-1"x43" & 7/8" [20,0] E** | **8.8** | **588535000** |
| **Taper tie 1 1/4"-1"x49" & 7/8" [20,0] E** | **10.6** | **588536000** |
| **Taper tie 1 1/4"-1"x55" & 7/8" [20,0] E** | **12.1** | **588537000** |
| **Taper tie 1 1/4"-1"x61" & 7/8" [20,0] E** | **13.9** | **588538000** |
| **Taper tie 1 1/4"-1"x67" & 7/8" [20,0] E** | **15.7** | **588539000** |
| **Taper tie 1 1/4"-1"x73" & 7/8" [20,0] E** | **17.4** | **588540000** |
| **Taper tie 1 1/4"-1"x79" & 7/8" [20,0] E** | **19.2** | **588541000** |
| Kon. Ankerstab 1 1/4"-1" & 7/8" [20,0] E | | |
| | | |
| **Super plate 20.0 B**<br>Superplatte 20,0 B<br>Galvanized<br>Height: 2 3/4" (7 cm)<br>Diameter: 5 1/2" (14 cm)<br>Width-across: 34 mm | **4.4** | **581424000** |
|  | | |

## Taper tie system 1 1/2" to 1 1/4"

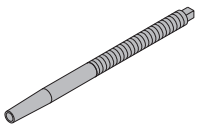
| | | |
|---|---|---|
| **Taper tie 1 1/2" to 1 1/4"x36"** | **13.2** | **585642000** |
| **Taper tie 1 1/2" to 1 1/4"x42"** | **15.4** | **585643000** |
| **Taper tie 1 1/2" to 1 1/4"x48"** | **18.1** | **585644000** |
| **Taper tie 1 1/2" to 1 1/4"x54"** | **20.1** | **585645000** |
| **Taper tie 1 1/2" to 1 1/4"x60"** | **22.3** | **585646000** |
| **Taper tie 1 1/2" to 1 1/4"x66"** | **24.0** | **585647000** |
| **Taper tie 1 1/2" to 1 1/4"x72"** | **26.0** | **585648000** |
| **Taper tie 1 1/2" to 1 1/4"x78"** | **36.8** | **585552000** |
| Konischer Ankerstab 1 1/2" auf 1 1/4" | | |
|  | | |
| **Wing nut 1 1/4"**<br>Flügelmutter 1 1/4" | **1.2** | **585633000** |
|  | | |

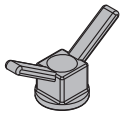
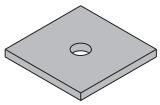
| | [lbs] | Article # |
|---|---|---|
| **Wing nut 1 1/2"**<br>Flügelmutter 1 1/2" | **2.9** | **585634000** |
|  | | |
| **Flat washer 1 1/4" (5x5x3/4)**<br>Ankerplatte 1 1/4" | **5.3** | **585531000** |
|  | | |
| **Flat washer 1 1/2" (5x5x3/4)**<br>Ankerplatte 1 1/2" | **5.3** | **585532000** |
|  | | |
| **Batter washer 1 1/4"**<br>Winkelplatte 1 1/4" | **5.5** | **585635000** |
| **Batter washer 1 1/2"**<br>Winkelplatte 1 1/2" | **5.5** | **585636000** |

## She-bolt system 7/8"

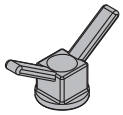
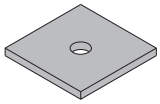
| | | |
|---|---|---|
| **She-bolt 7/8"x13"** | **2.6** | **588555000** |
| **She-bolt 7/8"x20"** | **3.7** | **588556000** |
| **She-bolt 7/8"x24"** | **4.2** | **588557000** |
| Ankerkopf 7/8" | | |
|  | | |
| **Super plate 20.0 B**<br>Superplatte 20,0 B<br>Galvanized<br>Height: 2 3/4" (7 cm)<br>Diameter: 5 1/2" (14 cm)<br>Width-across: 34 mm | **4.4** | **581424000** |
|  | | |

## She-bolt system 1 1/2"

| | | |
|---|---|---|
| **She-bolt 1 1/2"x14"** | **5.7** | **585637000** |
| **She bolt 1 1/2"x20"** | **8.4** | **585638000** |
| Ankerkopf 1 1/2" | | |
|  | | |
| **Coil rod 1"x12'-0"**<br>Rollgewindestab 1"x12'-0" | **24.5** | **585502000** |

| | [lbs] | Article # |
|---|---|---|
| **Wing nut 1 1/2"**<br>Flügelmutter 1 1/2" | **2.9** | **585634000** |
|  | | |
| **Flat washer 1 1/2" (5x5x3/4)**<br>Ankerplatte 1 1/2" | **5.3** | **585532000** |
|  | | |
| **Batter washer 1 1/2"**<br>Winkelplatte 1 1/2" | **5.5** | **585636000** |

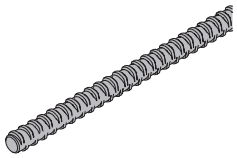
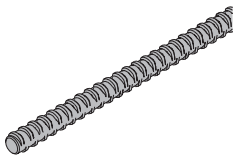
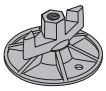
## Coil rod system 1"

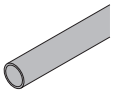
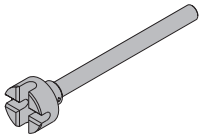
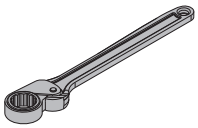
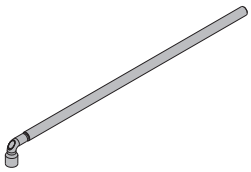
| | | |
|---|---|---|
| **Coil rod 1"x12'-0"**<br>Rollgewindestab 1"x12'-0" | **24.5** | **585502000** |
| **Wing nut 1"**<br>Flügelmutter 1" | **1.1** | **585632000** |
|  | | |
| **Flat washer 1" (5x5x3/4)**<br>Ankerplatte 1" | **5.3** | **585530000** |
|  | | |
| **Batter washer 1"**<br>Winkelplatte 1" | **4.0** | **585540000** |

## Coil rod system 3/4"

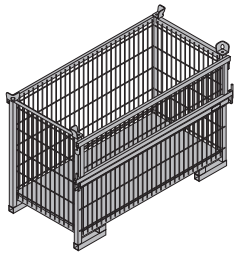
| | | |
|---|---|---|
| **Coil rod 3/4"x12'-0"**<br>Rollgewindestab 3/4"x12'-0" | **13.9** | **585501000** |
| **Wing nut 3/4"**<br>Flügelmutter 3/4" | **2.0** | **585853000** |
| **Flat washer 3/4" (5x5x3/8)**<br>Ankerplatte 3/4" | **3.5** | **585529000** |

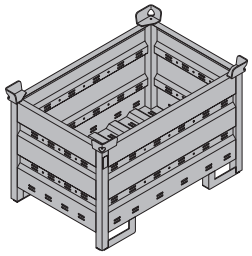
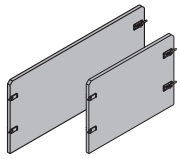
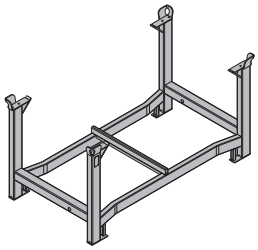
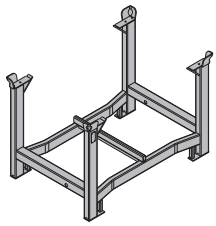
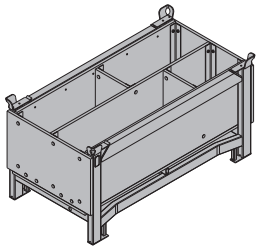
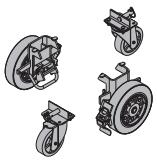
## Tie rod system 5/8" [15.0mm]

| | [lbs] | Article # |
|---|---|---|
| **Tie rod 15.0mm galvanized 0.50m** | **1.6** | **581821000** |
| **Tie rod 15.0mm galvanized 0.75m** | **2.4** | **581822000** |
| **Tie rod 15.0mm galvanized 1.00m** | **3.1** | **581823000** |
| **Tie rod 15.0mm galvanized 1.25m** | **4.0** | **581826000** |
| **Tie rod 15.0mm galvanized 1.50m** | **4.9** | **581827000** |
| **Tie rod 15.0mm galvanized 1.75m** | **5.5** | **581828000** |
| **Tie rod 15.0mm galvanized 2.00m** | **6.4** | **581829000** |
| **Tie rod 15.0mm galvanized 2.50m** | **7.9** | **581852000** |
| **Tie rod 15.0mm galvanized .....m** | **3.1** | **581824000** |
| **Tie rod 15.0mm non-treated 0.50m** | **1.6** | **581870000** |
| **Tie rod 15.0mm non-treated 0.75m** | **2.4** | **581871000** |
| **Tie rod 15.0mm non-treated 1.00m** | **3.1** | **581874000** |
| **Tie rod 15.0mm non-treated 1.25m** | **4.0** | **581886000** |
| **Tie rod 15.0mm non-treated 1.50m** | **4.6** | **581876000** |
| **Tie rod 15.0mm non-treated 1.75m** | **5.5** | **581887000** |
| **Tie rod 15.0mm non-treated 2.00m** | **6.4** | **581875000** |
| **Tie rod 15.0mm non-treated 2.50m** | **7.9** | **581877000** |
| **Tie rod 15.0mm non-treated 3.00m** | **9.5** | **581878000** |
| **Tie rod 15.0mm non-treated 3.50m** | **11.0** | **581888000** |
| **Tie rod 15.0mm non-treated 4.00m** | **12.6** | **581879000** |
| **Tie rod 15.0mm non-treated 5.00m** | **15.9** | **581880000** |
| **Tie rod 15.0mm non-treated 6.00m** | **19.0** | **581881000** |
| **Tie rod 15.0mm non-treated 7.50m** | **23.6** | **581882000** |
| **Tie rod 15.0mm non-treated .....m**<br>Ankerstab 15,0mm | **3.1** | **581873000** |
|  | | DIN 18216 |
| **Tie rod 5/8"x12'-0" galvanized [15.0mm]**<br>**Tie rod 5/8"x12'-0" non-treated [15.0mm]**<br>Ankerstab 5/8" [15,0mm] 12'-0" | **11.9**<br>**11.9** | **585520000**<br>**585520010** |
|  | | DIN 18216 |
| **Super plate 15.0**<br>Superplatte 15,0 | **2.4** | **581966000** |
|  Galvanized<br>Height: 2 1/4" (6 cm)<br>Diameter: 4 1/2" (12 cm)<br>Width-across: 27 mm | | DIN 18216 |
| **Wing nut 15.0**<br>Flügelmutter 15,0 | **0.68** | **581961000** |
| Galvanized<br>Length: 4" (10 cm)<br>Height: 2" (5 cm)<br>Width-across: 27 mm | | DIN 18216 |
| **Hexagon nut 15.0**<br>Sechskantmutter 15,0 | **0.51** | **581964000** |
| Galvanized<br>Length: 2" (5 cm)<br>Width-across: 30 mm | | DIN 18216 |
| **Star grip nut 15.0 G**<br>Sternmutter 15,0 G | **1.0** | **587544000** |
| Galvanized<br>Width: 4" (10 cm)<br>Height: 2" (5 cm)<br>Width-across: 30 mm | | |

| | [lbs] | Article # |
|---|---|---|
| **Plastic tube 22mm 2.50m**<br>Kunststoffrohr 22mm 2,50m | **0.99** | **581951000** |
|  | | |
| **Universal cone 22mm**<br>Universal-Konus 22mm<br>Gray<br>Diameter: 1 5/8" (4 cm) | **0.011** | **581995000** |
| | | |
| **Plug 22mm**<br>Verschlussstopfen 22mm<br>Gray | **0.007** | **581953000** |
| | | |
| **Tie rod wrench 15.0/20.0**<br>Ankerstabschlüssel 15,0/20,0<br>Galvanized<br>Length: 1'-3" (37 cm)<br>Diameter: 3 1/4" (8 cm) | **4.2** | **580594000** |
|  | | |
| **Friction type ratchet SW27**<br>Freilaufknarre SW27<br>manganese-phosphated<br>Length: 1' (30 cm) | **1.1** | **581855000** |
|  | | |
| **Box spanner 27 0,65m**<br>Steckschlüssel 27 0,65m<br>Galvanized | **4.2** | **581854000** |
|  | | |

## Multi-trip packaging

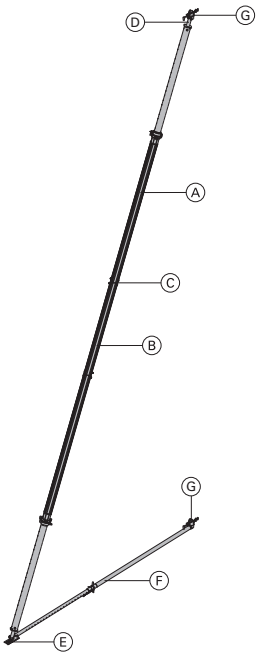
| | | |
|---|---|---|
| **Doka skeleton transport box 1.70x0.80m**<br>Doka-Gitterbox 1,70x0,80m<br>Galvanized<br>Height: 3'-8" (113 cm)<br>Follow the directions in the "Operating Instructions"! | **192.0** | **583012000** |
|  | | |

| | [lbs] | Article # |
|---|---|---|
| **Doka multi-trip transport box 1.20x0.80m**<br>Doka-Mehrwegcontainer 1,20x0,80m<br>Galvanized<br>Height: 2'-7" (78 cm)<br>Follow the directions in the "Operating Instructions"! | **165.0** | **583011000** |
|  | | |
| **Multi-trip transport box partition 0.80m**<br>**Multi-trip transport box partition 1.20m**<br>Mehrwegcontainer Unterteilung<br>Timber parts varnished yellow<br>Steel parts galvanized | **8.2**<br>**12.1** | **583018000**<br>**583017000** |
|  | | |
| **Doka stacking pallet 1.55x0.85m**<br>Doka-Stapelpalette 1,55x0,85m<br>Galvanized<br>Height: 2'-6" (77 cm)<br>Follow the directions in the "Operating Instructions"! | **92.6** | **586151000** |
|  | | |
| **Doka stacking pallet 1.20x0.80m**<br>Doka-Stapelpalette 1,20x0,80m<br>Galvanized<br>Height: 2'-6" (77 cm)<br>Follow the directions in the "Operating Instructions"! | **87.1** | **583016000** |
|  | | |
| **Doka accessory box**<br>Doka-Kleinteilebox<br>Timber parts varnished yellow<br>Steel parts galvanized<br>Length: 5'-1" (154 cm)<br>Width: 2'-9" (83 cm)<br>Height: 2'-6" (77 cm)<br>Follow the directions in the "Operating Instructions"!<br>Special order only! | **235.0** | **583010000** |
|  | | |
| **Bolt-on castor set B**<br>Anklemm-Radsatz B<br>Painted blue | **74.1** | **586168000** |
|  | | |

## Specific parts for Canada

| | [lbs] | Article # |
|---|---|---|
| **Eurex 60 550**<br>Eurex 60 550<br>depending on length, comprising: | | |
| (A) **Plumbing strut Eurex 60 550**<br>Powder-coated, blue<br>Aluminum<br>Length: 11'-3" - 18'-2" (343 - 553 cm) | **93.7** | **582658000** |
| (B) **Extension Eurex 60 2.00m**<br>Powder-coated, blue<br>Aluminum<br>Length: 8'-2" (250 cm) | **47.0** | **582651000** |
| (C) **Coupler Eurex 60**<br>Aluminum<br>Length: 3'-3" (100 cm)<br>Diameter: 5" (12,8 cm) | **19.0** | **582652000** |
| (D) **Connector Eurex 60**<br>Galvanized<br>Length: 6" (15 cm)<br>Width: 6" (15 cm)<br>Height: 1' (30 cm) | **8.6** | **582657000** |
| (E) **Plumbing strut shoe Eurex 60**<br>Galvanized<br>Length: 1' (31 cm)<br>Width: 4 $^1/_2$" (12 cm)<br>Height: 1'-1" (33 cm) | **18.7** | **582660000** |
| (F) **Adjusting strut 540 Eurex 60**<br>Galvanized<br>Length: 9'-11" - 17'-10" (302 - 543 cm) | **63.9** | **582659000** |
| (G) **Prop head**<br>2 pcs.<br>Galvanized<br>Length: 1'-4" (40,8 cm)<br>Width: 4 $^1/_2$" (11,8 cm)<br>Height: 7" (17,6 cm) | **7.7** | **588244000** |

Delivery condition: separate parts



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